

UPDATE TO THE STATUS REVIEW OF

Claytonia lanceolata var. flava

U.S.D.A. FOREST SERVICE - REGION 1

GALLATIN NATIONAL FOREST

MONTANA

Prepared by:

Lisa Schassberger Roe, Botanist
Montana Natural Heritage Program
State Library Building
1515 E. 6th Avenue
Helena, MT 59620

Order No.

43-0398-1-0170



© 1992 Montana Natural Heritage Program

This document should be cited as follows:

Roe, L.S. 1992. Update to the status review of Claytonia lanceolata var. flava on the Gallatin National Forest. Montana Natural Heritage Program, Helena, MT. 65 pp.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION.....	1
GEOGRAPHICAL DISTRIBUTION.....	1
POPULATION DEMOGRAPHY AND BIOLOGY.....	3
HABITAT.....	8
SPECIES INFORMATION AND SYSTEMATIC STATUS.....	9
ASSESSMENT AND MANAGEMENT RECOMMENDATIONS.....	10
DOCUMENTATION.....	10
LITERATURE CITED.....	12
ELEMENT OCCURRENCE PRINT-OUTS AND MAPS.....	13

INTRODUCTION

SPECIES: Claytonia lanceolata Pursh var. flava (A. Nels.) C.L. Hitch.
FAMILY: Portulacaceae (Purslane Family).

A survey of the East, Main and West Boulder River drainages, and selected areas of the Gallatin National Forest for Claytonia lanceolata var. flava, was completed during the week of June 3-7, 1991. A complete status report (Shelly 1989) details much of the information known about C. lanceolata var. flava. This report contains a summary of these surveys, ongoing studies, and new information obtained since January 1989.

GEOGRAPHICAL DISTRIBUTION

In addition to the detailed survey of the Boulder River drainages for C. lanceolata var. flava populations, eight new populations were located at sites across the Gallatin National Forest during 1991. Twenty new locations (nineteen containing all white individuals, one containing all yellow individuals) of C. lanceolata var. flava have been documented since 1989. This brings the total of known locations for this species to twenty-five. These populations occur in twelve counties (Jefferson, Deer Lodge, Beaverhead, Gallatin, Silver Bow, Granite, Cascade, Sweetgrass, Madison, Park, Broadwater, and Judith Basin) across the state. Of these locations, five contain all yellow or a mix of yellow and white forms, while the other twenty contain only the white form. The current distribution of the yellow and white forms of C. lanceolata var. flava in Montana is shown in Figure 1, p. 2. The exact locations are shown on maps, pp. 39-65. Populations are known to occur on Beaverhead, Deerlodge, Gallatin, and Lewis and Clark National Forest lands.

Shelly's (1989) range for the species as a whole may be greatly expanded depending on the scope of the taxonomic revision undertaken as outlined below under Species Information and Systematic Status, (p. 9). Also, because of the inconspicuous nature of the plant, and its similarity to variety lanceolata, at least the white form of variety flava is probably more common than previously suspected.

The following areas were surveyed for C. lanceolata var. flava because the habitat appeared to be suitable on topographic maps, but the species was not located within them. The actual areas surveyed may be smaller than the portions of the sections indicated.

T03S R06E SECTION 31, NE $\frac{1}{4}$ SE $\frac{1}{4}$
T03S R06E SECTION 32, NW $\frac{1}{4}$ SW $\frac{1}{4}$
T04S R06E SECTION 9, NE $\frac{1}{4}$ SE $\frac{1}{4}$
T04S R06E SECTION 23, NW $\frac{1}{4}$ NW $\frac{1}{4}$
T04S R04E SECTION 35, SE $\frac{1}{4}$ SE $\frac{1}{4}$

T04S R04E SECTION 33, NE $\frac{1}{4}$
 T05S R05E SECTION 30, NE $\frac{1}{4}$ SW $\frac{1}{4}$
 T06S R04E SECTION 12, CENTRAL
 T06S R04E SECTION 32, SW $\frac{1}{4}$ (privately owned)
 T09S R04E SECTION 11, NW $\frac{1}{4}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$

POPULATION DEMOGRAPHY AND BIOLOGY

In summary, the twenty-five populations consist of approximately 909,208-1,119,825 individuals and cover approximately 4010 acres. The five populations that contain the yellow form cover approximately 3450 acres, and have approximately 776,000-796,000 individuals. Complete details of each population are in the Element Occurrence Records, pp. 13-38. Detailed information on the East Boulder River populations is included here and described by Schassberger (1991).

POPULATION SIZE AND LANDOWNERSHIP:

- a. Lockhart Meadows (001)
 1. **Area occupied by population:** ca. 600 acres.
 2. **Estimated number of individuals:** ca. 30,000-35,000 plants in numerous large colonies; yellow and white forms present.
 3. **Evidence of population expansion or decline:** none.
 4. **Landowner(s) :** Deerlodge National Forest, Jefferson Ranger District, privately owned land.
- b. French Creek (002)
 1. **Area occupied by population:** ca. 800 acres.
 2. **Estimated number of individuals:** ca. 10,000-20,000 individuals in nine subpopulations; yellow and white forms present.
 3. **Evidence of population expansion or decline:** none.
 4. **Landowner(s):** Beaverhead National Forest, Wise River Ranger District & Mount Haggin Wildlife Management Area & Bureau of Land Management, Butte District, Headwaters Resource Area.
- c. Vipond Park (003)
 1. **Area occupied by population:** ca. 800 acres.
 2. **Estimated number of individuals:** ca. 11,000 plants; yellow and white forms present.
 3. **Evidence of population expansion or decline:** none.
 4. **Landowner:** Beaverhead National Forest, Wise River Ranger District.
- d. Hebgen Lake (004)

1. **Area occupied by population:** ca. 1200 acres.
 2. **Estimated number of individuals:** ca. 15,000-20,000 plants in two main subpopulations; mostly yellow forms, only a few white individuals present.
 3. **Evidence of population expansion or decline:** none.
 4. **Landowner(s):** privately owned & Gallatin National Forest, Hebgen Lake Ranger District.
- e. **Burton Park (005)**
1. **Area occupied by population:** ca. 200 acres.
 2. **Estimated number of individuals:** ca. 60,000 individuals in 11 subpopulations; white form only.
 3. **Evidence of population expansion or decline:** none.
 4. **Landowner:** privately owned & Deerlodge National Forest, Butte Ranger District.
- f. **Georgetown Lake (006)**
1. **Area occupied by population:** ca. 30 acres.
 2. **Estimated number of individuals:** ca. 10,000 to 20,000 individuals; white form only.
 3. **Evidence of population expansion or decline:** none.
 4. **Landowner(s):** privately owned & Deerlodge National Forest, Philipsburg Ranger District.
- g. **Belt Park (007)**
1. **Area occupied by population:** ca. 120 acres.
 2. **Estimated number of individuals:** ca. 10,000 individuals; white form only.
 3. **Evidence of population expansion or decline:** none.
 4. **Landowner(s):** privately owned & Lewis & Clark National Forest, Kings Hill Ranger District.
- h. **Upper Wilson Park (008)**
1. **Area occupied by population:** ca. 15 acres.
 2. **Estimated number of individuals:** ca. 1000 individuals; white form only.
 3. **Evidence of population expansion or decline:** adjacent area logged, it is not known if population was affected.
 4. **Landowner(s):** Lewis & Clark National Forest, Kings Hill Ranger District.
- i. **East Boulder River (009)**
1. **Area occupied by population:** ca. 8 acres.

2. **Estimated number of individuals:** ca. 200 individuals, white form only.
 3. **Evidence of population expansion or decline:** none, roadway may have eliminated a portion of this population.
 4. **Landowner(s):** privately owned & Gallatin National Forest, Big Timber Ranger District.
- j. Cinnamon Creek (010)
1. **Area occupied by population:** ca. 40 acres.
 2. **Estimated number of individuals:** ca. 10,000 individuals; white form only.
 3. **Evidence of population expansion or decline:** lower meadow areas appear to have once contained Artemisia tridentata now have low shrub cover; C. lanceolata var. flava may be increasing here.
 4. **Landowner(s):** Gallatin National Forest, Hebgen Lake Ranger District.
- k. Squaw Creek (011)
1. **Area occupied by population:** ca. 10 acres.
 2. **Estimated number of individuals:** ca. 200-300 plants.
 3. **Evidence of population expansion or decline:** population is in closely fenced pasture and may be affected by grazing.
 4. **Landowner(s):** Gallatin National Forest, Bozeman Ranger District.
- l. Porcupine Creek (012)
1. **Area occupied by population:** ca. 20 acres.
 2. **Estimated number of individuals:** ca. 250-500 individuals; white form only.
 3. **Evidence of population expansion or decline:** none.
 4. **Landowner(s):** Gallatin National Forest, Bozeman Ranger District.
- m. Red Cliff Campground (013)
1. **Area occupied by population:** ca. 5 acres.
 2. **Estimated number of individuals:** ca. 400-500 individuals; white form only.
 3. **Evidence of population expansion or decline:** portions of population were probably eliminated during construction of campground.
 4. **Landowner(s):** Gallatin National Forest, Bozeman Ranger District.
- n. Willow Swamp (014)
1. **Area occupied by population:** not known.
 2. **Estimated number of individuals:** common; white form only.

3. Evidence of population expansion or decline: not known.
 4. Landowner(s): Ted Turner, Flying D Ranch.
- o. Cherry Creek Canyon (015)
1. Area occupied by population: not known.
 2. Estimated number of individuals: common; white form only.
 3. Evidence of population expansion or decline: not known.
 4. Landowner(s): Ted Turner, Flying D Ranch.
- p. Flying D Ranch (016)
1. Area occupied by population: not known.
 2. Estimated number of individuals: common; white form only.
 3. Evidence of population expansion or decline: not known.
 4. Landowner(s): Ted Turner, Flying D Ranch.
- q. Boulder River (017)
1. Area occupied by population: ca. 30 acres.
 2. Estimated number of individuals: ca. 10,200+ plants in two subpopulations; white form only.
 3. Evidence of population expansion or decline: none.
 4. Landowner(s): Privately owned & Gallatin National Forest, Big Timber Ranger District.
- r. Boulder River (018)
1. Area occupied by population: ca. 1 acre.
 2. Estimated number of individuals: 10-15 plants; white form only.
 3. Evidence of population expansion or decline: roadway may have eliminated a portion of the population as well as mowing of field for church camp.
 4. Landowner(s): Privately owned & Gallatin National Forest, Big Timber Ranger District.
- s. Boulder River (019)
1. Area occupied by population: ca. 1 acre.
 2. Estimated number of individuals: 5-10 plants; white form only.
 3. Evidence of population expansion or decline: roadside meadow, portions of population may have been eliminated through road building.
 4. Landowner(s): Gallatin National Forest, Big Timber Ranger District.
- t. West Boulder Meadows (020)
1. Area occupied by population: ca. 15 acres.

2. **Estimated number of individuals:** ca. 10,000 plants in 5 subpopulations; white form only.
 3. **Evidence of population expansion or decline:** human use of the area may be degrading portions of the habitat somewhat.
 4. **Landowner(s):** Gallatin National Forest, Big Timber Ranger District, Absaroka-Beartooth Wilderness Area.
- u. **Castle Fork Deep Creek (021)**
1. **Area occupied by population:** ca. 1 acre.
 2. **Estimated number of individuals:** ca. 100 individuals; white form only.
 3. **Evidence of population expansion or decline:** none.
 4. **Landowner(s):** privately owned & Helena National Forest, Townsend Ranger District.
- v. **Ettien Ridge (022)**
1. **Area occupied by population:** ca. 5 acres.
 2. **Estimated number of individuals:** ca. 1000 individuals; white form only.
 3. **Evidence of population expansion or decline:** none.
 4. **Landowner(s):** Lewis & Clark National Forest, Judith Ranger District.
- w. **Clover Meadows (023)**
1. **Area occupied by population:** ca. 15 acres.
 2. **Estimated number of individuals:** ca. 10,000-100,000 individuals; white form only.
 3. **Evidence of population expansion or decline:** none.
 4. **Landowner(s):** Beaverhead National Forest, Sheridan Ranger District.
- x. **Cottonwood Creek (024)**
1. **Area occupied by population:** ca. 47 acres.
 2. **Estimated number of individuals:** ca. 10,000-100,000 individuals; white form only.
 3. **Evidence of population expansion or decline:** none.
 4. **Landowner(s):** Beaverhead National Forest, Sheridan Ranger District.
- y. **Knobby Park (025)**
1. **Area occupied by population:** ca. 48 acres.
 2. **Estimated number of individuals:** ca. 711,000 individuals in large subpopulation and 1000 in small subpopulation to west; yellow form only.

3. Evidence of population expansion or decline: none.
4. Landowner(s): Beaverhead National Forest, Wise River Ranger District.

HABITAT

As described by Shelly (1989), this species often occurs in moist soils and poorly drained swales, most often in open meadows; but, it has also been found on steeper open (moist) slopes, and within the forest edge adjacent to meadows. In the latter case only the white form of variety flava has been found. Populations of C. lanceolata var. flava have been found as low as 5300 ft., and as high as 8200 ft. in elevation.

Additional associated plant species found at one or more sites include:

Pinus contorta (lodgepole pine)
Pseudotsuga menziesii (Douglas fir)

Achillea millefolium (common yarrow)
Agropyron spicatum (bluebunch wheatgrass)
Arabis hirsuta (hairy rockcress)
Arabis nuttallii (Nuttall's rockcress)
Besseyia wyomingensis (Wyoming kittentail)
Cerastium arvense (field chickweed)
Cirsium longistylum (long-styled thistle)
Collinsia parviflora (small-flowered blue-eyed Mary)
Delphinium bicolor (little larkspur)
Erythronium grandiflorum (glacier-lily)
Festuca idahoensis (Idaho fescue)
Geranium viscosissimum (sticky geranium)
Lithophragma parviflorum (smallflower woodlandstar)
Mertensia oblongifolia (oblongleaf bluebells)
Pedicularis groenlandica (elephant's head)
Phlox kelseyi var. missoulensis (Missoula phlox)
Potentilla gracilis (slender cinquefoil)
Ranunculus glaberrimus (sagebrush buttercup)
Rosa woodsii (woods rose)
Saxifraga oregana (Oregon saxifrage)
Thalictrum occidentale (western meadowrue)
Viola arvensis (cultivated pansy)
Viola canadensis (Canada violet)

SPECIES INFORMATION AND SYSTEMATIC STATUS

As stated by Shelly (1989) varieties flava and lanceolata are well differentiated genetically. The following is a synopsis of systematic information gained to date on the two varieties:

- o Preliminary analysis of the morphological data indicate that variety lanceolata and variety flava are significantly different, primarily in leaf length and width, and in petal shape (Shelly 1991). Variety flava has long slender leaves, and petal blades that are round at the tip, whereas variety lanceolata has shorter and wider leaves, petals that are frequently tinged or lined with pink, and petal blades that are often notched at the tip.
- o In Utah, C. lanceolata var. lanceolata was shown to have chromosome numbers of $n = 8, 12,$ and 16 (Stewart and Wiens 1971), indicating a polyploid series. Interpretation of banding patterns from electrophoretic data of the Montana variety flava populations was easy due to simple diploid expression (Soltis 1991), while variety lanceolata expressed more complex tetraploid (probably autotetraploid) banding patterns (Wolf 1988). For variety flava, $2n=16$ was obtained from mitotic counts (Lewis 1987).
- o At Cinnamon Creek (010), populations of variety flava and variety lanceolata overlap, but plants with intermediate characteristics were not observed (Lisa Roe, pers. obs. and collections (428) and (429) as outlined under Documentation, p. 10). In support of these observations, data from the electrophoretic analysis "strongly indicate" that although C. lanceolata var. flava is an outcrosser, there is little or no gene flow between var. lanceolata and var. flava (Wolf 1988). This contradicts the hypothesis by Shelly (1989), who felt that variety flava might be predominantly self-pollinating.
- o A study of C. lanceolata in western Washington (Douglas and Taylor 1972) showed that based on similarities in morphological measurements, and chemotaxonomy, the yellow-petaled C. lanceolata var. chrysantha should be relegated to synonymy under C. lanceolata var. lanceolata. "The difference in petal color is most likely due to one or very few genes, as evidenced by the virtual lack of intermediate color forms" (Douglas and Taylor 1972). Data from studies of the yellow and white forms of C. lanceolata var. flava in Montana indicate a similar relationship, with petal color being the only substantial phenotypic difference (Wolf 1988, Shelly 1991).
- o For the Montana and Wyoming C. lanceolata var. flava populations sampled, there was measurable genetic differentiation, indicating that no single locality possesses the total genetic diversity of the taxon.

These data indicate that C. lanceolata var. flava is distinct from C. lanceolata var. lanceolata at the specific level (Wolf 1988, Shelly 1991). In the process of raising C. lanceolata var. flava to specific status, the nomenclature of this plant will need be resolved. Likely synonymous entities include: C. multicaulis A. Nels., C. multiscapa Rydb., and C. aurea A. Nels. (Hitchcock and Cronquist 1984). In addition, the descriptions of Claytonia tuberosa Pall. (Hulten 1974), and C. rosea Rydb. (Halleck and Wiens 1966) indicate similarities to C. lanceolata var. flava. Further research may indicate the need to include one or both of these species within this group (Shelly 1991).

ASSESSMENT AND MANAGEMENT RECOMMENDATIONS

Based on population sizes and distribution information acquired from this survey and other sources, the Montana Natural Heritage Program state rank for C. lanceolata var. flava will be changed from S1 (critically imperiled in Montana because of extreme rarity, 5 or fewer occurrences), to S3 (rare in Montana, 21 to 100 occurrences). The scope of the taxonomic revision may indicate the need to change the U.S. Fish and Wildlife Service status of C. lanceolata var. flava from C2 to 3C.

There has been genetic divergence among populations of Claytonia lanceolata var. flava, as detected by electrophoretic analysis (Wolf 1988, Soltis 1991). For example, populations in the East Boulder River drainage fall within the flava complex, but have diverged compared to other sampled flava populations (Soltis 1991). It is recommended that as much of each known population be preserved, so as not to reduce the genetic variation present. Specific recommendations for the East Boulder River populations are described by Schassberger (1991).

As described above, the white form of var. flava is more widespread than the yellow form. Populations that contain the yellow form of var. flava tend to be large, but there are only five locations statewide. Due to the abundance and widespread distribution of this taxon, it is recommended that C. lanceolata var. flava be dropped from the U.S. Forest Service, Region 1 sensitive plant species list. However, due to limited distribution, populations that contain the yellow form should remain on a Forest level watch list for the three Forests (Beaverhead, Deerlodge and Gallatin) on which they are found.

DOCUMENTATION

Specimens detailed as follows will be deposited at the Montana State University Herbarium (MONT).

Claytonia lanceolata var. flava

Schassberger, L. (420), East Boulder River

Schassberger, L. (421), West Boulder River
Schassberger, L. (422), West Boulder River
Schassberger, L. (423), Main Boulder River
Schassberger, L. (424), Main Boulder River
Schassberger, L. (426), Squaw Creek Ranger Station
Schassberger, L. (428), Cinnamon Creek

Schassberger, L. (430), Red Cliff Campground
Schassberger, L. (443), Ettien Ridge

Claytonia lanceolata var. lanceolata

Schassberger, L. (425), Hyalite Reservoir
Schassberger, L. (427), Squaw Creek
Schassberger, L. (429), Cinnamon Creek

LITERATURE CITED

- Douglas, G.W. and R.J. Taylor. 1972. The biosystematics, chemotaxonomy, and ecology of Claytonia lanceolata in western Washington. Canadian Journal of Botany 50:2177-2178.
- Halleck, D. K., and D. Wiens. 1966. Taxonomic status of Claytonia rosea and C. lanceolata (Portulacaceae). Annals of the Missouri Botanical Garden. 53:205-212.
- Hitchcock, C. L., Cronquist A., Ownbey, M. and J.W. Thompson. 1964. Vascular Plants of the Pacific Northwest, Part 2. University of Washington Press, Seattle. 597 pp.
- Hulten, E. 1974. Flora of Alaska. Stanford University Press, Stanford, California. 1008 pp.
- Lewis, W.H. 1987. Professor of Biology, Washington University, St. Louis, MO. Letter of 31 August to Hollis Marriott concerning mitotic counts obtained for Claytonia lanceolata var. flava.
- Schassberger, L.A. 1991. Preliminary report to the Gallatin National Forest on field surveys for Claytonia lanceolata var. flava. Montana Natural Heritage Program, Helena, MT. 4 pp., plus maps.
- Shelly, J. S. 1989. Status review of Claytonia lanceolata var. flava, U.S. Forest Service - Region 1, Beaverhead, Deerlodge and Gallatin National Forests. Montana Natural Heritage Program, Helena, MT. 42 pp.
- Shelly, J. S. 1991. U.S. Forest Service Region 1 & Montana Natural Heritage Program Botanist. Phone call of 16 December concerning distribution and status of Claytonia lanceolata var. flava in Montana.
- Soltis, P. 1991. Washington State University. Letter 4 March to J. Stephen Shelly, concerning computer analysis of electrophoretic data involving Claytonia lanceolata var. flava.
- Stewart, D., and D. Wiens. 1971. Chromosome races in Claytonia lanceolata (Portulacaceae). American J. Bot. 58(1):41-47.
- Wolf, P. G. 1988. Analysis of electrophoretic variation in Claytonia lanceolata vars. lanceolata and flava. Unpublished preliminary report to the Montana Natural Heritage Program. 29 pp.

ELEMENT OCCURRENCE PRINT-OUTS AND MAPS

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

14

Occurrence number: 001

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: LOCKHART MEADOWS (CHAMPION PASS)
EO rank: A
EO rank comments: VERY EXTENSIVE POPULATION, IN FAIRLY
UNDISTURBED AREA.

County: JEFFERSON

USGS quadrangle: LOCKHART MEADOWS

Township: 006N Range: 008W Section: 35 Precision: S
Township-range comments: NE4,25E2,26SE4,36;T6NR7W:30NW4,
31SW4;T5NR8W:1,2NE4NE4

Survey date:	1988-06-04	Elevation:	6550
First observation:	1966	Slope/aspect:	
Last observation:	1988-06-04	Size (acres):	600

Location:

POWDERHORN CREEK AND LOCKHART MEADOWS, UPPER BOULDER RIVER DRAINAGE,
2.6-3.0 AIR MILES ENE TO SOUTHEAST OF CHAMPION PASS.

Element occurrence data:

EST. 30,000-35,000+ PLANTS, IN NUMEROUS LARGE COLONIES OVER EXTENSIVE
MEADOW AREAS; PLANTS RANGING FROM MOSTLY YELLOW- FLOWERED TO CA. 2/3
WHITE-FLOWERED.

General site description:

MOIST, POORLY DRAINED MONTANE MEADOWS; WITH DODECATHEON CONJUGENS,
POLYGONUM BISTORTOIDES, POTENTILLA FRUTICOSA, RANUNCULUS
ALISMAEFOLIUS.

Land owner/manager:

PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
DEERLODGE NATIONAL FOREST, JEFFERSON RANGER DISTRICT

Comments:

VOUCHERS-SHELLY, J.S. (1417), 1988, MONTU; PROBABLE RELOCATION OF
TRASK, F. (377), 1966, MONT.

Information source:

SCHASSBERGER, L.A. 1988. FIELD SURVEYS IN JEFFERSON, MADISON,
SILVER BOW, AND BEAVERHEAD COUNTIES.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

15

Occurrence number: 002

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: FRENCH CREEK (ANACONDA)
EO rank: A
EO rank comments: VERY LARGE POPULATION, AREA FAIRLY
UNDISTURBED.

County: DEER LODGE

USGS quadrangle: LINCOLN GULCH

Township: 002N Range: 012W Section: 12 Precision: S
Township-range comments: NW4,1,2,11;T3NR11W:31;T3NR12W:25,35,36.

Survey date:	1988-05-17	Elevation:	6200
First observation:	1911	Slope/aspect:	
Last observation:	1991-06-04	Size (acres):	800

Location:

FRENCH AND CALIFORNIA CREEKS. MOUNT HAGGIN WILDLIFE MANAGEMENT AREA,
ALONG HWY. 274, CA. 17.5-20 MILES SSW OF ANACONDA.

Element occurrence data:

CA. 10,000-20,000+ INDIVIDUALS, IN NINE AREAS; YELLOW PLANTS OCCUR
MIXED WITH WHITE ONES, IN VARYING RATIOS FROM ALL YELLOW TO 1:100+
YELLOW: WHITE, THROUGHOUT THE AREA; SITE PROBABLY SAME AS ORIGINAL
"ANACONDA" RECORDS.

General site description:

MOIST MONTANE GRASSLANDS; WITH DESCHAMPSIA CESPITOSA, DANTHONIA
INTERMEDIA, DODECATHEON CONJUGENS, POLYGONUM BISTORTOIDES, POTENTILLA
DIVERSIFOLIA, LOMATIUM COUS.

Land owner/manager:

BEAVERHEAD NATIONAL FOREST, WISE RIVER RANGER DISTRICT
MT HAGGIN WILDLIFE MANAGEMENT AREA
BLM: BUTTE DISTRICT, HEADWATERS RESOURCE AREA

Comments:

1991: DON HEINZE ADDED TWO SUBPOPULATIONS TO S. SHELLY'S SEVEN, IN
SECTION 10. VOUCHERS-SHELLY, J.S. (1413), AND LESICA, P., 1988,
MONTU; ALBRIGHT (807), 1911, MONT; BLANKENSHIP (768), POM.

Information source:

SHELLY, J.S. 1988. FIELD SURVEYS IN SOUTHWESTERN MONTANA OF 8 MAY,
17-18 MAY, 25-27 MAY, 4 & 10 JUNE.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

16

Occurrence number: 003

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: VIPOND PARK
EO rank: AB
EO rank comments: ROADS AND GRAZING ARE THREATS.

County: BEAVERHEAD

USGS quadrangle: VIPOND PARK

Township: 002S Range: 011W Section: 02 Precision: S
Township-range comments: 1N2,11W2,S2SE4,12SW4SW4, 13NW4,14N2; T1SR11W:
35SE4;T2SR11W:10N E4;T1SR10W:31S2SW4.

Survey date: 1988-06-07 Elevation: 8200
First observation: 1982 Slope/aspect:
Last observation: 1991-06-14 Size (acres): 800

Location:

PIONEER MOUNTAINS, CA. 8 MILES SOUTH OF DEWEY, UP QUARTZ HILL ROAD TO
VIPOND PARK; EAST OF ROAD.

Element occurrence data:

CA. 11,000+ PLANTS; MIXED YELLOW AND WHITE, GRADING TO WHITE ONLY TO
THE SOUTH; RELOCATION OF 1982 SIGHTING BY K. SCOW.

General site description:

OPEN PARK LAND, WITH LATE SNOWMELT AND POOR DRAINAGE; WITH POTENTILLA
FRUTICOSA, POLYGONUM BISTORTOIDES, RANUNCULUS ALISMAEFOLIUS, GEUM
TRIFLORUM, MERTENSIA LONGIFLORA.

Land owner/manager:

BEAVERHEAD NATIONAL FOREST, WISE RIVER RANGER DISTRICT

Comments:

1991: LOCATION OF ADDITIONAL SUBPOPULATION BY DALE MCKNIGHT,
BEAVERHEAD NATIONAL FOREST. LIVESTOCK AND BIG GAME GRAZING, POCKET
GOPHER AND BADGER ACTIVITY. VOUCHER-SCHASSBERGER, L.A. (206), 1988,
MONTU; SCOW, K. (S.N.), 1982, WESTECH (HELENA, MT).

Information source:

SCHASSBERGER, L.A. 1988. FIELD SURVEYS IN JEFFERSON, MADISON,
SILVER BOW, AND BEAVERHEAD COUNTIES.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

17

Occurrence number: 004

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: HEBGEN LAKE
EO rank: B
EO rank comments: EXTENSIVE OCCURRENCE, BUT HABITAT
ALTERED IN MANY LOCATIONS.

County: GALLATIN

USGS quadrangle: MADISON ARM

Township: 013S Range: 004E Section: 03 Precision: S
Township-range comments: SW4,4SE4,9NE4,10N2,14NW4,15,23NW4

Survey date: 1988-05-26 Elevation: 6550
First observation: 1986 Slope/aspect:
Last observation: 1988-05-27 Size (acres): 1200

Location:

SOUTH OF HEBGEN LAKE, WEST SIDE OF MADISON VALLEY, CA. 0.5-3 AIR MILES
SOUTH OF LONESOMEHURST CAMPGROUND, EAST AND SOUTH OF HEBGEN LAKE RD.
(#167).

Element occurrence data:

EST. 15,000-20,000+ INDIVIDUALS, IN TWO MAIN AREAS; PLANTS VIRTUALLY
ALL YELLOW-FLOWERED, WITH ONLY A FEW WHITE-FLOWERED INDIVIDUALS
OBSERVED (POPULATION UNUSUAL IN THIS RESPECT).

General site description:

MOIST GRASSLANDS, IN LOAM AND CLAY LOAM SOILS; WITH WYETHIA
HELIANTHOIDES, CAMASSIA QUAMASH, POLYGONUM BISTORTOIDES, POTENTILLA
FRUTICOSA, ARTEMISIA CANA, DODECATHEON.

Land owner/manager:

PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
GALLATIN NATIONAL FOREST, HEBGEN LAKE RANGER DISTRICT

Comments:

VOUCHERS-SHELLY, J.S. (1419) & P. LESICA, 1988, MONTU; NIXON, J. (1),
1987, MONT.

Information source:

SHELLY, J.S. 1988. FIELD SURVEYS IN SOUTHWESTERN MONTANA OF 8 MAY,
17-18 MAY, 25-27 MAY, 4 & 10 JUNE.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

18

Occurrence number: 005

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: BURTON PARK
EO rank: A
EO rank comments: LARGE, REPRESENTATIVE POPULATION; ALL
WHITE-FLOWERED.

County: SILVER BOW

USGS quadrangle: MOUNT HUMBUG

Township: 001N Range: 008W Section: 27 Precision: S
Township-range comments: SW4NE4, NE4NW4, E2SE4; 22W2, NW4SE4,
26SW4SW4, 35NW4NW4, 20E2SE4.

Survey date:	1989-06-05	Elevation:	6880
First observation:	1988	Slope/aspect:	LEVEL
Last observation:	1989-06-05	Size (acres):	200

Location:

HIGHLAND MOUNTAINS, BURTON PARK AND UPPER NORTH FORK TUCKER CREEK, CA.
12 AIR MILES SSW OF BUTTE; ALONG HIGHLAND ROAD (N.F. ROAD #84).

Element occurrence data:

CA. 60,000 PLANTS IN 11 SUBPOPULATIONS; ONLY WHITE-FLOWERED PLANTS
OBSERVED.

General site description:

LARGE, LEVEL MEADOW, WITH POTENTILLA FRUTICOSA, DODECATHEON CONJUGENS,
POLYGONUM BISTORTOIDES, GEUM TRIFLORUM.

Land owner/manager:

PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
DEERLODGE NATIONAL FOREST, BUTTE RANGER DISTRICT

Comments:

VOUCHER-SCHASSBERGER, L.A. (204). 1988. MONTU; SYSTEMATIC STUDIES IN
PROGRESS. UNIQUE POPULATION--ENTIRELY WHITE-FLOWERED.

Information source:

SCHASSBERGER, L.A. 1989. FIELD SURVEYS OF THE PIONEER MOUNTAINS, 6-9
JUNE.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

19

Occurrence number: 006

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: GEORGETOWN LAKE

EO rank: B

EO rank comments: GOOD POPULATION, COULD BE IMPACTED BY
HOUSING.

County: GRANITE

USGS quadrangle: GEORGETOWN LAKE

Township: 005N Range: 014W Section: 14 Precision: S
Township-range comments: SE4NW4, 22NE4NW4

Survey date: 1990-06-14	Elevation: 6400
First observation: 1990	Slope/aspect: FLAT-1% / SOUTHEAST
Last observation: 1990-06-14	Size (acres): 30

Location:

GEORGETOWN LAKE; ALONG CA. 3.3 MILES OF ROAD ON WEST SHORE, SOUTHEAST
AND NORTHWEST OF ROAD.

Element occurrence data:

10-20 THOUSAND PLANTS, PEAK FLOWERING TIME (1990-06-14); WHITE-PETALED
FORM ONLY.

General site description:

MAIN POPULATION CENTER IN WET FORB MEADOW, WITH CAMASSIA QUAMASH,
POLYGONUM BISTORTOIDES, DODECATHEON PULCHELLUM, PEDICULARIS
GROENLANDICA, GEUM TRIFLORUM, SAXIFRAGA OREGANA, AND POTENTILLA
DIVERSIFOLIA. PEATY LOAM SOILS. SOME INVASION BY WEEDS; TARAXACUM
OFFICINALE.

Land owner/manager:

PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
DEERLODGE NATIONAL FOREST, PHILIPSBURG RANGER DISTRICT

Comments:

SUBPOPULATION IN SECTION 22 IS ON ROCKY SEEPY OUTCROP, WITH PHLOX
KELSEYI VAR MISSOULENSIS. VOUCHER - SCHAESSBERGER, L.A. (370), 1990,
MONTU.

Information source:

SCHAESSBERGER, L. A. 1990. [FIELD SURVEYS OF GRANITE COUNTY 11-15 JUNE
(LESQUERELLA CARINATA, CLAYTONIA LANCEOLATA VAR FLAVA, AND PHLOX
KELSEYI VAR MISSOULENSIS)].

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

20

Occurrence number: 007

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: BELT PARK
EO rank: B
EO rank comments: CLOSE TO ROAD.

County: CASCADE

USGS quadrangle: BELT PARK BUTTE

Township: 014N Range: 007E Section: 27 Precision: S
Township-range comments: NE4, 22SE4, 23SW4

Survey date: 1990-06-27 Elevation: 7000
First observation: 1990 Slope/aspect:
Last observation: 1990-06-27 Size (acres): 120

Location:

LITTLE BELT MOUNTAINS; CA. 3 MILES WEST OF NEIHART, SOUTH OF FS ROAD
#834.

Element occurrence data:

10,000 INDIVIDUALS, FLOWERING (WHITE FORM).

General site description:

IN MOIST FORB MEADOW, WITH ALOPECURUS PRATENSIS, DODECATHEON
PULCHELLUM, DESCHAMPSIA CAESPITOSA, BESSEYA WYOMINGENSIS, CIRSIUM
LONGISTYLUM, POLYGONUM BISTORTOIDES.

Land owner/manager:

LEWIS & CLARK NATIONAL FOREST, KINGS HILL RANGER DISTRICT
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:

SURVEY DONE WITH DIANE PAVEK; CLAYTONIA LANCEOLATA VAR. LANCEOLATA
ALSO PRESENT.

Information source:

SCHASSBERGER, L. A. MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST 6TH
AVE., HELENA, MT 59620. (387). 1990.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

21

Occurrence number: 008

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: UPPER WILSON PARK
EO rank: C
EO rank comments: JUST EAST OF A CLEAR-CUT.

County: CASCADE

USGS quadrangle: BUBBLING SPRINGS
BELT PARK BUTTE

Township: 014N Range: 007E Section: 20 Precision: S
Township-range comments:

Survey date:	1990-06-27	Elevation:	7400
First observation:	1990	Slope/aspect:	3-15% / SOUTHEAST
Last observation:	1990-06-27	Size (acres):	15

Location:

LITTLE BELT MOUNTAINS; FROM HWY 89, JUST NORTH OF KINGS HILL PASS,
TAKE FS ROAD #839 NORTHWEST CA. 12 MILES. SITE IS 0.5 MILE NORTH OF
DRY PEAK.

Element occurrence data:

1000 INDIVIDUALS (WHITE FORM).

General site description:

ALONG THE TOP OF A SOUTHEAST-FACING RIDGELINE, IN LOAMY SOIL.
ASSOCIATED SPECIES: FESTUCA SCABRELLA, F. IDAHOENSIS, PHLOX KELSEYI
VAR. MISSOULENSIS, POLYGONUM BISTORTOIDES, DODECATHEON PULCHELLUM,
BESSEYA WYOMINGENSIS, AND GEUM TRIFLORUM.

Land owner/manager:

LEWIS & CLARK NATIONAL FOREST, KINGS HILL RANGER DISTRICT

Comments:

SURVEY DONE WITH DIANE PAVEK.

Information source:

SCHASSBERGER, L. A. MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST 6TH
AVE., HELENA, MT 59620. (384). 1990. MONT.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

22

Occurrence number: 009

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: EAST BOULDER RIVER
EO rank:
EO rank comments:

County: SWEET GRASS

USGS quadrangle: SQUAW PEAK

Township: 004S Range: 013E Section: 02 Precision: S
Township-range comments: SW4; 3SE4; 4NE4; 11N2

Survey date: 1990-06-20 Elevation: 6200
First observation: 1990 Slope/aspect: 0-5% / ALL
Last observation: 1990-06-20 Size (acres): 8

Location:

BEARTOOTH MOUNTAINS, EAST BOULDER RIVER DRAINAGE; GALLATIN NATIONAL
FOREST ROAD #205, CA. 4 MILES SOUTHEAST OF EAST BOULDER CAMPGROUND.

Element occurrence data:

SEVERAL HUNDRED WHITE-FLOWERED PLANTS OBSERVED IN LATE FLOWER AND
FRUIT. ELECTROPHORETIC ANALYSIS INDICATED THIS POPULATION IS WITHIN
THE FLAVA COMPLEX, BUT IS FAIRLY DIVERGENT GENETICALLY COMPARED TO
OTHER SAMPLED FLAVA POPULATIONS.

General site description:

FOUND ALONG BOTTOM OF EAST BOULDER DRAINAGE. GEOMORPHIC LAND FORM IS
PROBABLY MOSTLY ALLUVIAL AND THE SOIL TEXTURE IS CLAY LOAM. ASSOCIATED
SPECIES: PINUS CONTORTA, PSEUDOTSUGA MENZIESII, ACHILLEA MILLEFOLIUM,
MERTENSIA SPP., COLLINSIA PARVIFLORA, ARABIS NUTTALLII. COMPLETE
SPECIES LIST ON FILE AT THE MONTANA NATURAL HERITAGE PROGRAM.

Land owner/manager:

GALLATIN NATIONAL FOREST, BIG TIMBER RANGER DISTRICT
PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)

Comments:

FIELD SURVEY CONDUCTED BY STEVE SHELLY AND SALLY ORR (RESOURCE
ASSISTANT, BIG TIMBER RANGER DISTRICT).

Information source:

SHELLY, J. STEPHEN. USFS REGION 1, RAWE, P.O. BOX 7669, MISSOULA, MT
59807. (1616, 1617). 1990. MONTU.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

23

Occurrence number: 010

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: CINNAMON CREEK
EO rank: A
EO rank comments: EXCELLENT POPULATION WITH LOW GRAZING
PRESSURE, VERY FEW WEEDS.

County: GALLATIN

USGS quadrangle: SUNSHINE POINT

Township: 008S Range: 004E Section: 27 Precision: S
Township-range comments: SW4NW4, 28SE4NE4, NE4SE4

Survey date:	1991-06-06	Elevation:	6040
First observation:	1991	Slope/aspect:	15-30% / NORTH
Last observation:	1991-06-06	Size (acres):	40

Location:

GALLATIN RIVER VALLEY; CA. 37 MILES NORTH OF WEST YELLOWSTONE AT
CINNAMON CREEK RANGER STATION.

Element occurrence data:

TENS OF THOUSANDS OF PLANTS IN FLOWER, JUNE 6, 1991.

General site description:

IN OPEN FORB MEADOWS; SURROUNDING FOREST IS ABIES LASIOCARPA/PINUS
CONTORTA. ASSOCIATED SPECIES: GERANIUM VISCOSISSIMUM, MERTENSIA
OBLONGIFOLIA, GEUM TRIFLORUM, ARABIS HIRSUTA, DELPHINIUM BICOLOR,
POLYGONUM BISTORTOIDES, RANUNCULUS GLABERRIMUS.

Land owner/manager:

GALLATIN NATIONAL FOREST, HEBGEN LAKE RANGER DISTRICT

Comments:

SITE APPEARS TO HAVE BEEN DOMINATED BY ARTEMISIA TRIDENTATA AT ONE
TIME, BUT THE SHRUBS ARE DYING OFF. UPHILL AREAS DOMINATED BY A.
TRIDENTATA AND CLAYTONIA LANCEOLATA VAR. LANCEOLATA REPLACES C.
LANCEOLATA VAR. FLAVA. ALL SPRUCE TREES AREA DEAD IN THIS AREA,
POSSIBLY DUE TO SPRUCE BUDWORM.

Information source:

SCHASSBERGER, LISA A. MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST 6TH
AVE., HELENA, MT 59620. (428). 1991. MONT.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

24

Occurrence number: 011

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: SQUAW CREEK
EO rank: C
EO rank comments: IN SMALL, FENCED HORSE PASTURES.

County: GALLATIN

USGS quadrangle: GARNET MOUNTAIN

Township: 004S Range: 004E Section: 28 Precision: S
Township-range comments: NW4SW4

Survey date: 1991-06-07 Elevation: 5320
First observation: 1991 Slope/aspect: 0-3% / SOUTHEAST
Last observation: 1991-06-07 Size (acres): 10

Location:

GALLATIN RIVER VALLEY; CA. 24 MILES SOUTH OF BOZEMAN. TURN OFF AT
SQUAW CREEK AND CROSS BRIDGE; POPULATION IS IN PASTURES IN FRONT OF
FOREST RANGER STATION.

Element occurrence data:
200-300 PLANTS.

General site description:

IN NATIVE VEGETATION WITHIN FENCED HORSE PASTURES. ASSOCIATED SPECIES:
DELPHINIUM BICOLOR, COLLINSIA PARVIFLORA, DODECATHEON PULCHELLUM,
TARAXACUM OFFICINALE, CLEMATIS HIRSUTISSIMA, CERASTIUM ARVENSE.

Land owner/manager:

GALLATIN NATIONAL FOREST, BOZEMAN RANGER DISTRICT

Comments:

ALTHOUGH GRAZING APPEARS LIGHT, IT HAS CHANGED THE MOISTURE REGIME OF
THIS SITE.

Information source:

SCHASSBERGER, LISA A. MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST 6TH
AVE., HELENA, MT 59620. (427). 1991. MONT.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

25

Occurrence number: 012

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: PORCUPINE CREEK

EO rank: B

EO rank comments: NICE POPULATION BUT CLOSE TO A ROAD.

County: GALLATIN

USGS quadrangle: LONE INDIAN PEAK

Township: 007S Range: 004E Section: 16 Precision: S

Township-range comments: NE4SW4

Survey date: 1991-06-06	Elevation: 6160
First observation: 1991	Slope/aspect: 3-20% / NORTH
Last observation: 1991-06-06	Size (acres): 20

Location:

GALLATIN RIVER VALLEY; CA. 43 MILES SOUTH OF BOZEMAN. CA. 0.33 MILE
EAST OF HWY UP PORCUPINE CREEK, POPULATION IN OPEN MEADOW SOUTH OF
ROAD.

Element occurrence data:
250-500 PLANTS.

General site description:

IN OPEN MOIST MEADOW. ASSOCIATED SPECIES: POTENTILLA FRUTICOSA,
DODECATHEON PULCHELLUM, MERTENSIA OBLONGIFOLIA, GEUM TRIFLORUM,
ERYTHRONIUM GRANDIFLORUM, DELPHINIUM BICOLOR.

Land owner/manager:

GALLATIN NATIONAL FOREST, BOZEMAN RANGER DISTRICT

Comments:

NICE SITE; GOOD POTENTIAL FOR MORE SUBPOPULATIONS UP THE CREEK.

Information source:

SCHASSBERGER, LISA A. MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST 6TH
AVE., HELENA, MT 59620.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

26

Occurrence number: 013

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: RED CLIFF CAMPGROUND
EO rank: C
EO rank comments: HIGH IMPACT FROM CAMPERS.

County: GALLATIN

USGS quadrangle: LONE INDIAN PEAK

Township: 007S Range: 004E Section: 33 Precision: S
Township-range comments: NW4SE4, SW4SE4

Survey date: 1991-06-06	Elevation: 6240
First observation: 1991	Slope/aspect: 3-10% / WEST
Last observation: 1991-06-06	Size (acres): 5

Location:

GALLATIN RIVER VALLEY, CA. 47 MILES SOUTH OF BOZEMAN; IN RED CLIFF CAMPGROUND, NORTH LOOP.

Element occurrence data:
400-500 PLANTS.

General site description:

IN NATIVE HABITAT AT CAMPGROUND EDGES, MOIST SITES; PSEUDOTSUGA MENZIESII FOREST OPENING. ASSOCIATED SPECIES: DODECATHEON PULCHELLUM, MERTENSIA OBLONGIFOLIA, GEUM TRIFLORUM, ARABIS HIRSUTA, DELPHINIUM BICOLOR.

Land owner/manager:

GALLATIN NATIONAL FOREST, BOZEMAN RANGER DISTRICT

Comments:

CURRENTLY CAMPGROUND AREA IS IN GOOD CONDITION. WITH INCREASED USE, POPULATION COULD BE THREATENED.

Information source:

SCHASSBERGER, LISA A. MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST 6TH AVE., HELENA, MT 59620. (430). 1991. MONT.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

27

Occurrence number: 014

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: WILLOW SWAMP
EO rank:
EO rank comments:

County: MADISON

USGS quadrangle: WILLOW SWAMP

Township: 004S Range: 002E Section: 26 Precision: M
Township-range comments:

Survey date:	1990-05-30	Elevation:	7100
First observation:	1990	Slope/aspect:	
Last observation:	1990-05-30	Size (acres):	0

Location:

MADISON RANGE, AROUND "WILLOW SWAMP," AT THE HEAD OF THE NORTH FORK
SPANISH CREEK, ON THE FLYING D RANCH.

Element occurrence data:

COMMON; NARROW-LEAVED, WHITE MORPHS.

General site description:

WET MEADOWS, WITH: POLYGONUM BISTORTOIDES AND POTENTILLA GRACILIS.

Land owner/manager:

FLYING "D" RANCH CONSERVATION EASEMENT

Comments:

Information source:

LESICA, PETER. DIVISION OF BIOLOGICAL SCIENCES, UNIVERSITY OF MONTANA,
MISSOULA, MT 59812. (5061). MONTU.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

28

Occurrence number: 015

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: CHERRY CREEK CANYON
EO rank:
EO rank comments:

County: MADISON

USGS quadrangle: CHERRY CREEK CANYON

Township: 003S Range: 002E Section: 24 Precision: M
Township-range comments:

Survey date:	Elevation: 5850
First observation: 1990	Slope/aspect:
Last observation: 1990-06-01	Size (acres): 0

Location:
NORTH FACING SLOPES, SOUTHEAST OF CHERRY CREEK CANYON, ON THE FLYING D RANCH.

Element occurrence data:
COMMON; NARROW-LEAVED, WHITE MORPHS.

General site description:
MOIST GRASSLANDS; ASSOCIATED SPECIES: GERANIUM VISCOSISSIMUM AND
POTENTILLA GRACILIS.

Land owner/manager:
FLYING "D" RANCH CONSERVATION EASEMENT

Comments:

Information source:
LESICA, PETER. DIVISION OF BIOLOGICAL SCIENCES, UNIVERSITY OF MONTANA,
MISSOULA, MT 59812. (5069). 1990. MONTU.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

29

Occurrence number: 016

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: FLYING D RANCH
EO rank:
EO rank comments:

County: MADISON

USGS quadrangle: BEAR TRAP CREEK

Township: 003S Range: 002E Section: 31 Precision: M
Township-range comments:

Survey date:	Elevation: 6450
First observation: 1990	Slope/aspect:
Last observation: 1990-05-30	Size (acres):

Location:

MADISON RANGE, FLYING D RANCH; IN AN ASPEN GROVE ALONG A SMALL STREAM
IN THE FOOTHILLS.

Element occurrence data:

COMMON, NARROW-LEAVED WHITE MORPHS.

General site description:

ASPEN GROVE, ALONG A SMALL STREAM. ASSOCIATED SPECIES: THALICTRUM
OCCIDENTALE AND VIOLA CANADENSIS.

Land owner/manager:

FLYING "D" RANCH CONSERVATION EASEMENT

Comments:

Information source:

LESICA, PETER. DIVISION OF BIOLOGICAL SCIENCES. UNIVERSITY OF MONTANA,
MISSOULA, MT 59812. (5055). 1990. MONTU.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

30

Occurrence number: 017

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: BOULDER RIVER

EO rank: B

EO rank comments: LARGE POPULATION, HEAVY HUMAN IMPACT.

County: SWEET GRASS

USGS quadrangle: MOUNT DOUGLAS

Township: 005S Range: 012E Section: 35 Precision: S

Township-range comments: W2

Survey date: 1991-06-05

Elevation: 6120

First observation: 1991

Slope/aspect: 0-40% / SOUTH, WEST,

EAST

Last observation: 1991-06-05

Size (acres): 30

Location:

BOULDER RIVER; CA. 35 MILES SOUTH OF BIG TIMBER, ON KNOLL ABOVE HELLS CANYON CAMPGROUND, AND 0.75 MILE SOUTH ON EDGE OF SAGEBRUSH KNOLL.

Element occurrence data:

10,000+ PLANTS IN SOUTHERN SUBPOPULATION, 200+ IN NORTHERN POPULATION.

General site description:

MOIST MEADOWS AND SAGEBRUSH GRASSLANDS IN LOAMY SOIL. ASSOCIATED SPECIES: DODECATHEON PULCHELLUM, VIOLA ARVENSE, COLLINSIA PARVIFLORA, ROSA WOODSII, ARTEMISIA TRIDENTATA, MERTENSIA OBLONGIFOLIA, DELPHINIUM BICOLOR, LITHOPHRAGMA PARVIFLORUM, AGROPYRON SPICATUM, AND FESTUCA IDAHOENSIS.

Land owner/manager:

PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
GALLATIN NATIONAL FOREST, BIG TIMBER RANGER DISTRICT
ABSAROKA-BEARTOOTH WILDERNESS AREA

Comments:

PRIVATE LAND IS GRAZED.

Information source:

ROE, LISA S., MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620. (423,424). 1991. MONT.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

31

Occurrence number: 018

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: BOULDER RIVER

EO rank: C

EO rank comments: SMALL POPULATION; THE REST OF THE MEADOW
IS MOWED AND POSSIBLY SEEDED FOR CAMP
USE.

County: SWEET GRASS

USGS quadrangle: CHROME MOUNTAIN

Township: 005S Range: 012E Section: 23 Precision: S
Township-range comments: NW4SE4

Survey date:	1991-06-05	Elevation:	5715
First observation:	1991	Slope/aspect:	0-1% / EAST
Last observation:	1991-06-05	Size (acres):	1

Location:

BOULDER RIVER; CA. 34 MILES SOUTH OF BIG TIMBER, MT., ON WEST SIDE OF
THE ROAD, AT CAMP ON THE BOULDER RIVER.

Element occurrence data:
10-15 PLANTS.

General site description:

EDGES OF MOIST MEADOW IN NATIVE HABITAT, WITH DODECATHEON PULCHELLUM,
MERTENSIA OBLONGIFOLIA AND FESTUCA IDAHOENSIS.

Land owner/manager:

PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
GALLATIN NATIONAL FOREST, BIG TIMBER RANGER DISTRICT

Comments:

Information source:

ROE, LISA S., MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH
AVENUE, HELENA, MT 59620.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

32

Occurrence number: 019

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: BOULDER RIVER
EO rank: C
EO rank comments: SMALL ROADSIDE POPULATION.

County: SWEET GRASS

USGS quadrangle: CHROME MOUNTAIN

Township: 004S Range: 012E Section: 36 Precision: S
Township-range comments: NE4NW4

Survey date:	1991-06-05	Elevation:	5440
First observation:	1991	Slope/aspect:	0-5% / WEST
Last observation:	1991-06-05	Size (acres):	1

Location:

BOULDER RIVER; CA. 30 MILES SOUTH OF BIG TIMBER, IN SMALL ROADSIDE MEADOW EAST OF BOULDER RIVER ROAD.

Element occurrence data:
5-10 PLANTS.

General site description:

ROADSIDE MEADOW, IN LOAMY SOIL, WITH ACHILLEA MILLEFOLIUM, DODECATHEON PULCHELLUM, AND FESTUCA IDAHOENSIS.

Land owner/manager:

GALLATIN NATIONAL FOREST, BIG TIMBER RANGER DISTRICT

Comments:

Information source:

ROE, LISA S., MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

33

Occurrence number: 020

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: WEST BOULDER MEADOWS
EO rank: B
EO rank comments: LARGE POPULATION; TRAIL WITH HEAVY USE
BISECTS POPULATION.

County: PARK

USGS quadrangle: MOUNT RAE

Township: 004S Range: 011E Section: 02 Precision: S
Township-range comments: W2;T3SR11E:25,SE4SW4.

Survey date:	1991-06-06	Elevation:	5715
First observation:	1991	Slope/aspect:	0-15% / EAST, WEST
Last observation:	1991-06-06	Size (acres):	15

Location:

WEST BOULDER RIVER, CA. 28 MILES SOUTHWEST OF BIG TIMBER. TRAVEL TO THE WEST BOULDER RIVER CAMPGROUND. PARK AND HIKE SOUTH ON FS TRAIL #41. ONE POPULATION IS ALONG TRAIL, WHILE THE REST ARE AT WEST BOULDER MEADOWS.

Element occurrence data:

10,000+ PLANTS IN FIVE SUBPOPULATIONS.

General site description:

OPEN MEADOWS IN LOAMY SOILS; WITH: DODECATHEON PULCHELLUM, MERTENSIA OBLONGIFOLIA, DELPHINIUM BICOLOR, LITHOPHRAGMA PARVIFLORUM, AND SCATTERED ROSA WOODSII.

Land owner/manager:

ABSAROKA-BEARTOOTH WILDERNESS AREA
GALLATIN NATIONAL FOREST, BIG TIMBER RANGER DISTRICT

Comments:

NONE

Information source:

ROE, LISA S., MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH AVENUE, HELENA, MT 59620. (422). 1991. MONT.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

34

Occurrence number: 021

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: CASTLE FORK DEEP CREEK
EO rank:
EO rank comments:

County: BROADWATER

USGS quadrangle: BATTLE MOUNTAIN

Township: 007N Range: 005E Section: 22 Precision: S
Township-range comments: NE4

Survey date:	Elevation: 5790
First observation: 1991	Slope/aspect: 0-10% / SOUTH
Last observation: 1991-07-01	Size (acres): 1

Location:

BIG BELT MOUNTAINS; CA. 22 MILES EAST OF TOWNSEND ON HWY 12, JUST
NORTH OF ROAD IN WET SWALE.

Element occurrence data:
100+ PLANTS.

General site description:

OPEN MOIST SWALE IN SAGEBRUSH UPLANDS, WITH POLYGONUM BISTORTOIDES,
MERTENSIA OBLONGIFOLIA AND DODECATHEON PULCHELLUM.

Land owner/manager:

PRIVATELY OWNED LAND (INDIVIDUAL OR CORPORATE)
HELENA NATIONAL FOREST, TOWNSEND RANGER DISTRICT

Comments:

ENTIRE SITE NOT SURVEYED.

Information source:

ROE, LISA S., MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH
AVENUE, HELENA, MT 59620.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

35

Occurrence number: 022

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: ETTIEN RIDGE
EO rank:
EO rank comments:

County: JUDITH BASIN

USGS quadrangle: ETTIEN SPRING

Township: 012N Range: 010E Section: 34 Precision: S
Township-range comments: SW4

Survey date:	Elevation: 7000
First observation: 1991	Slope/aspect: 10-20% / SOUTH
Last observation: 1991-07-02	Size (acres): 5

Location:

LITTLE BELT MOUNTAINS, ETTIEN RIDGE. FROM UTICA; TAKE FS RD #487
SOUTHWEST CA. 23 MILES, TURN RIGHT ON FS RD #821. SITE IS IN OPEN
MEADOW AT TURN, JUST BEFORE TRAIL #433 LEAVES THE ROAD.

Element occurrence data:
1000+ PLANTS.

General site description:

IN MEADOW AND BENEATH THE EDGE OF A LODGEPOLE FOREST, WITH MERTENSIA
OBLONGIFOLIA, POLYGONUM BISTORTOIDES, DODECATHEON PULCHELLUM AND
POTENTILLA FRUTICOSA.

Land owner/manager:

LEWIS & CLARK NATIONAL FOREST, JUDITH RANGER DISTRICT

Comments:

AREA WAS NOT THOROUGHLY SURVEYED.

Information source:

ROE, LISA S., MONTANA NATURAL HERITAGE PROGRAM, 1515 EAST SIXTH
AVENUE, HELENA, MT 59620. (443). 1991. MONT.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

36

Occurrence number: 023

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: CLOVER MEADOWS
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: BROOMTAIL RIDGE

Township: 009S Range: 002W Section: 22 Precision: S
Township-range comments: CENTER

Survey date: 1991-06-17 Elevation: 8450
First observation: 1991 Slope/aspect: LEVEL
Last observation: 1991-06-17 Size (acres): 15

Location:

GRAVELLY RANGE. FROM RUBY RESERVOIR, TAKE THE RUBY RIVER ROAD (FS RD #100) SOUTHEAST CA. 12 MILES, TURN EAST ON FS RD #163 FOR CA. 6 MILES, THEN SOUTH ON FS RD #290 FOR CA. 2.5 MILES. SITE IS IN MEADOW ON NORTHEAST EDGE OF CAMPGROUND.

Element occurrence data:

CA. 10,000-100,000 INDIVIDUALS, WHITE FORM ONLY. (90% FLOWERING AND FRUITING).

General site description:

55% GRAMINOID COVER, 40% FORB COVER, 5% TREE COVER AND TRACE BARE-GROUND COVER; MOIST SOILS.

Land owner/manager:

BEAVERHEAD NATIONAL FOREST, SHERIDAN RANGER DISTRICT

Comments:

FS ALLOTMENT #00167; OBSERVATION BY ROY T. MITA, SHERIDAN RANGER DISTRICT ECOLOGIST. SITE NEEDS MORE SURVEY.

Information source:

SENSITIVE PLANT COORDINATOR, BEAVERHEAD NATIONAL FOREST, 610 NORTH MONTANA STREET, DILLON MT 59725.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

37

Occurrence number: 024

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: COTTONWOOD CREEK
EO rank:
EO rank comments:

County: BEAVERHEAD

USGS quadrangle: IRON CREEK

Township: 010S Range: 003W Section: 10 Precision: S
Township-range comments: SE4

Survey date:	1991-06-17	Elevation:	7040
First observation:	1991	Slope/aspect:	15% / WEST
Last observation:	1991-06-17	Size (acres):	47

Location:

GRAVELLY RANGE, COTTONWOOD CREEK. TAKE THE RUBY RIVER ROAD (FS RD #100) SOUTH FOR CA. 16 MILES, THEN TRAVEL EAST ON FS RD #8837 FOR CA. 1 MILE. POPULATION IS NORTH AND SOUTH OF THE ROAD.

Element occurrence data:

CA. 10,000-100,000 INDIVIDUALS; WHITE FORM ONLY, 90% FLOWERING AND FRUITING.

General site description:

ARTEMISIA TRIDENTATA/FESTUCA IDAHOENSIS; 5% TREE COVER, 30% SHRUB COVER, 20% FORB COVER, 35% GRAMINOID COVER, 10% BARE GROUND; MIDSLOPE, DRY MEADOW HABITAT.

Land owner/manager:

COTTONWOOD CREEK RESEARCH NATURAL AREA
BEAVERHEAD NATIONAL FOREST, SHERIDAN RANGER DISTRICT

Comments:

OBSERVATIONS BY ROY MITA, SHERIDAN RANGER DISTRICT ECOLOGIST.
ALLOTMENT #00169. SITE IS IMMEDIATELY ADJACENT TO COTTONWOOD CREEK RESEARCH AREA.

Information source:

SENSITIVE PLANT COORDINATOR, BEAVERHEAD NATIONAL FOREST, 610 NORTH MONTANA STREET, DILLON, MT 59725.

ELEMENT OCCURRENCE RECORD
Claytonia lanceolata var. flava

38

Occurrence number: 025

Global rank: G5T1 Forest Service status: SENSITIVE
State rank: S1 Federal Status: C2

Survey site name: KNOBBY PARK

EO rank:

EO rank comments:

County: BEAVERHEAD

USGS quadrangle: VIPOND PARK

Township: 001S Range: 010W Section: 18 Precision: S
Township-range comments: SE2SE4,SW4SW4,19NE2NW4,NW2NE4.

Survey date: 1991-06-14 Elevation: 7500
First observation: 1991 Slope/aspect: 1% /EAST, WEST,
NORTHWEST
Last observation: 1991-06-26 Size (acres): 48

Location:

PIONEER MOUNTAINS, KNOBBY PARK. FROM 0.25 MILE WEST OF DEWEY, HEAD SOUTH ON FS RD #187 TO FS RD #7423 AT TOWN OF QUARTZ HILL, THEN NORTH TO FS RD #70614, THEN NORTH TO KNOBBY PARK.

Element occurrence data:

1991-06-14: LARGE POPULATION CA. 710,000 INDIVIDUALS. 1991-06-26: SMALL SUBPOPULATION TO WEST CA. 1000 INDIVIDUALS; ALL YELLOW FORM, 100% FLOWERING.

General site description:

IN OPEN, MOIST MEADOW, WITH ARTEMISIA TRIDENTATA, FESTUCA IDAHOENSIS, AGROPYRON CANINUM, ACHILLEA MILLEFOLIUM, POLYGONUM BISTORTOIDES, DODECATHEON PULCHELLUM, POTENTILLA GRACILIS, DELPHINIUM BICOLOR, ANTENNARIA MICROPHYLLA, JUNCUS SPP. FORB COVER 60-80%, GRAMINOID COVER 20-30%, SHRUB COVER TRACE TO 3%.

Land owner/manager:

BEAVERHEAD NATIONAL FOREST, WISE RIVER RANGER DISTRICT

Comments:

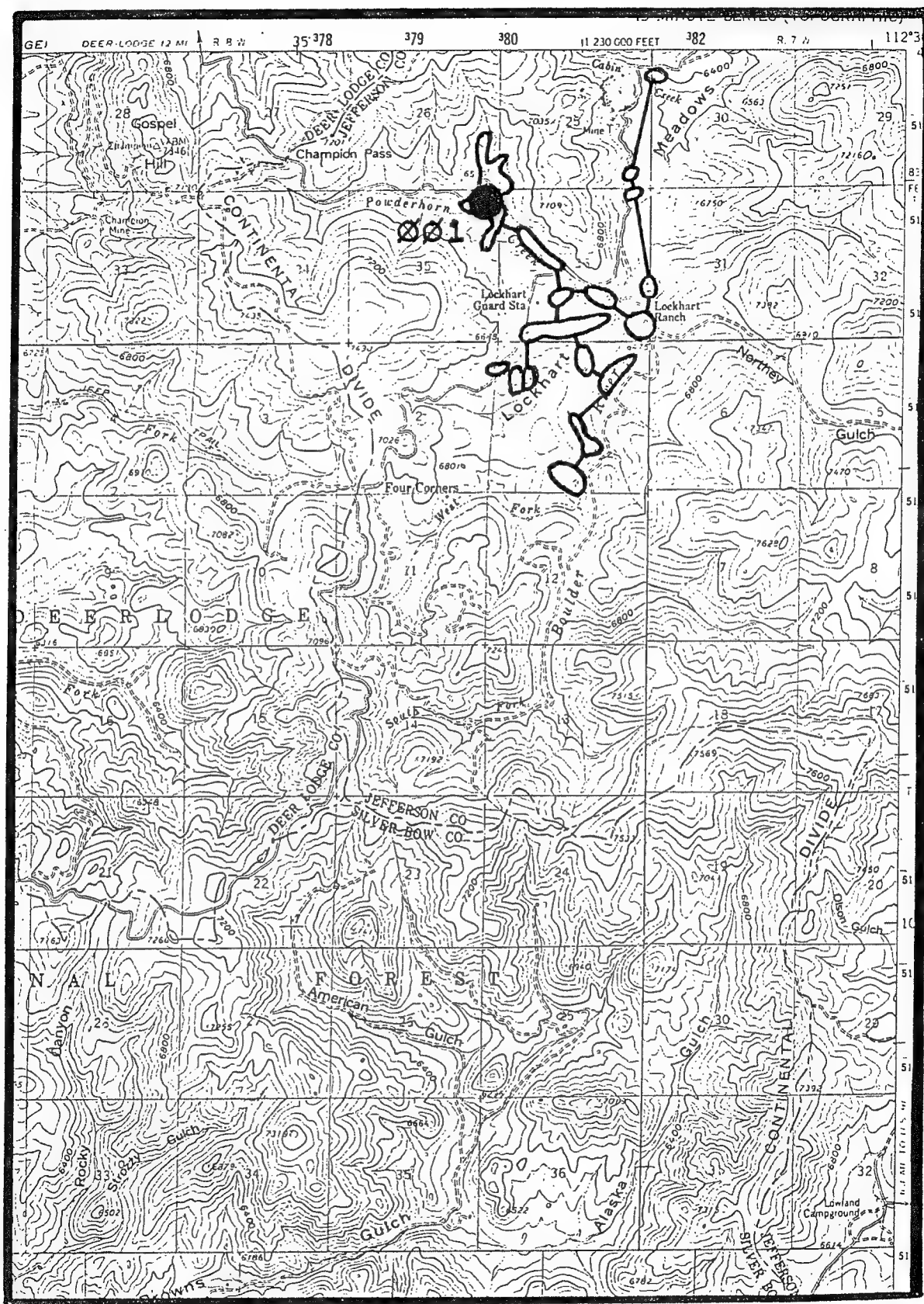
SURVEY BY DALE MCKNIGHT, DAN SVOBODA, AND HARVEY. ALLOTMENT 49, #237-3-15, 237-3-19, 238-4-8&9. ECODATA PLOTS #022C91M002, #022C91M001.

Information source:

SENSITIVE PLANT COORDINATOR, BEAVERHEAD NATIONAL FOREST, 610 NORTH MONTANA STREET, DILLON, MT 59725.

MONTANA

USGS Butte North (15') Quadrangle

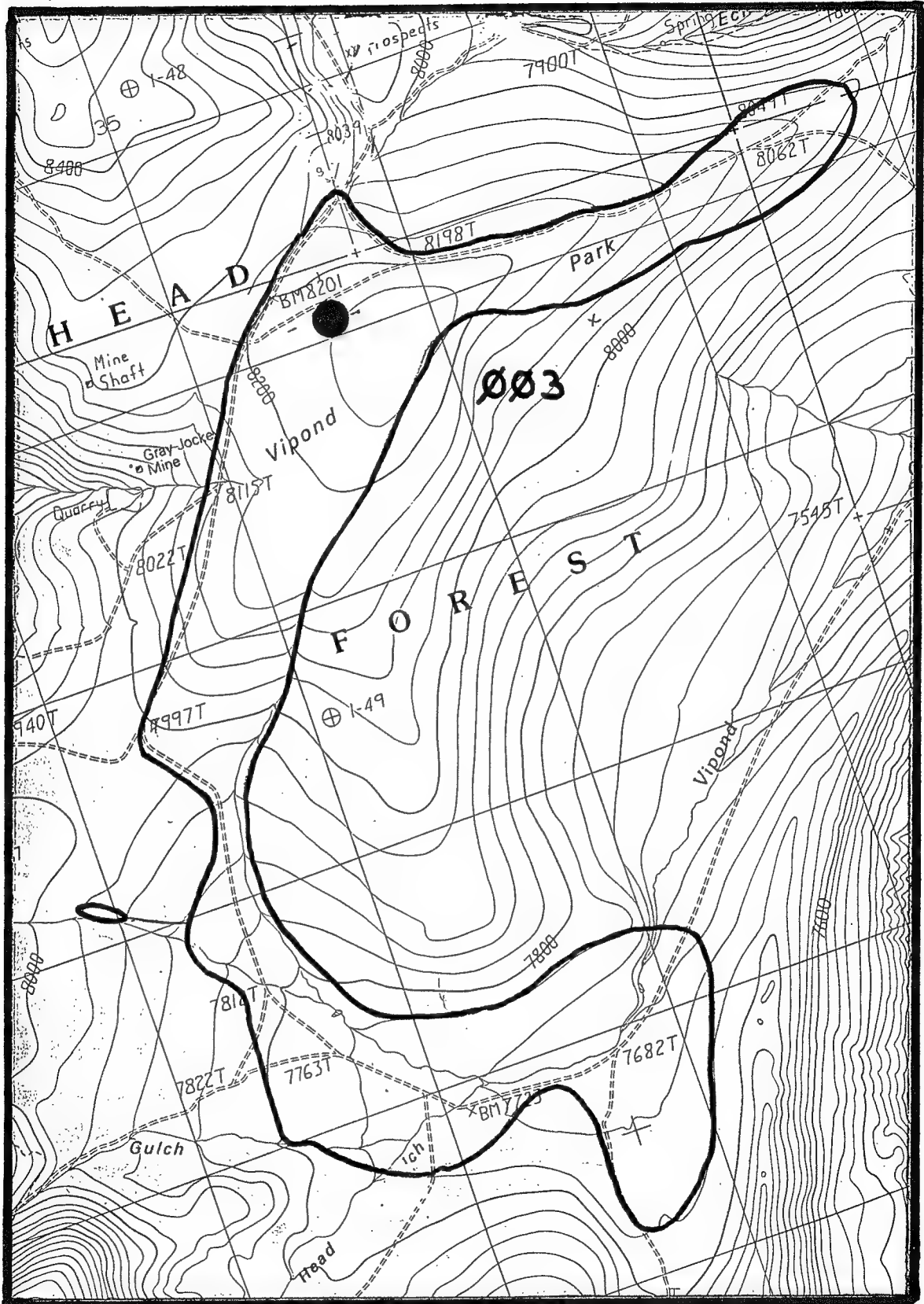
Claytonia lanceolata var. flava

Lockhart Meadows (001)

French Creek (002)

MONTANA

USGS Vipond Park (7.5') Quadrangle

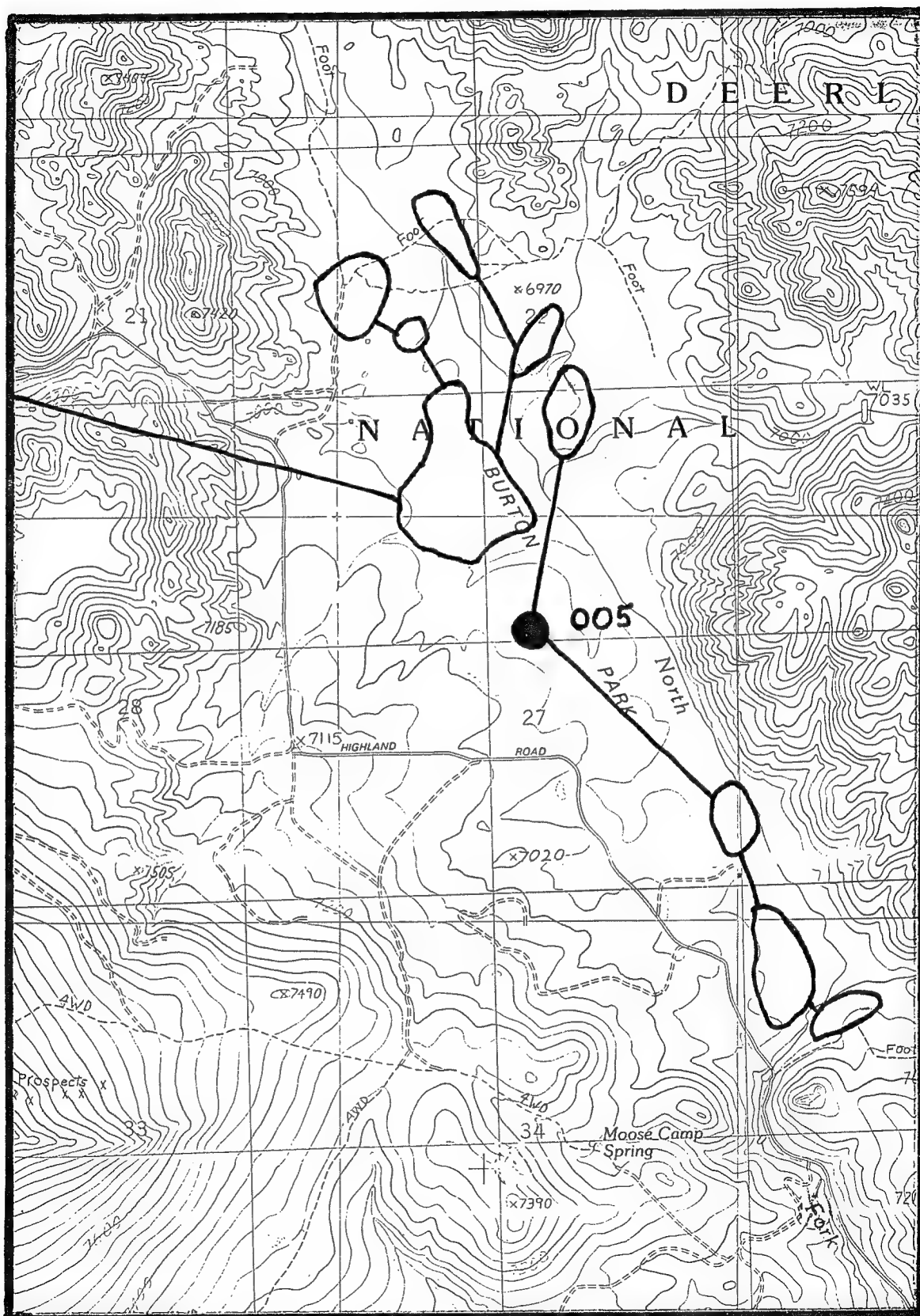
Claytonia lanceolata var. flava

Vipond Park (003)



MONTANA

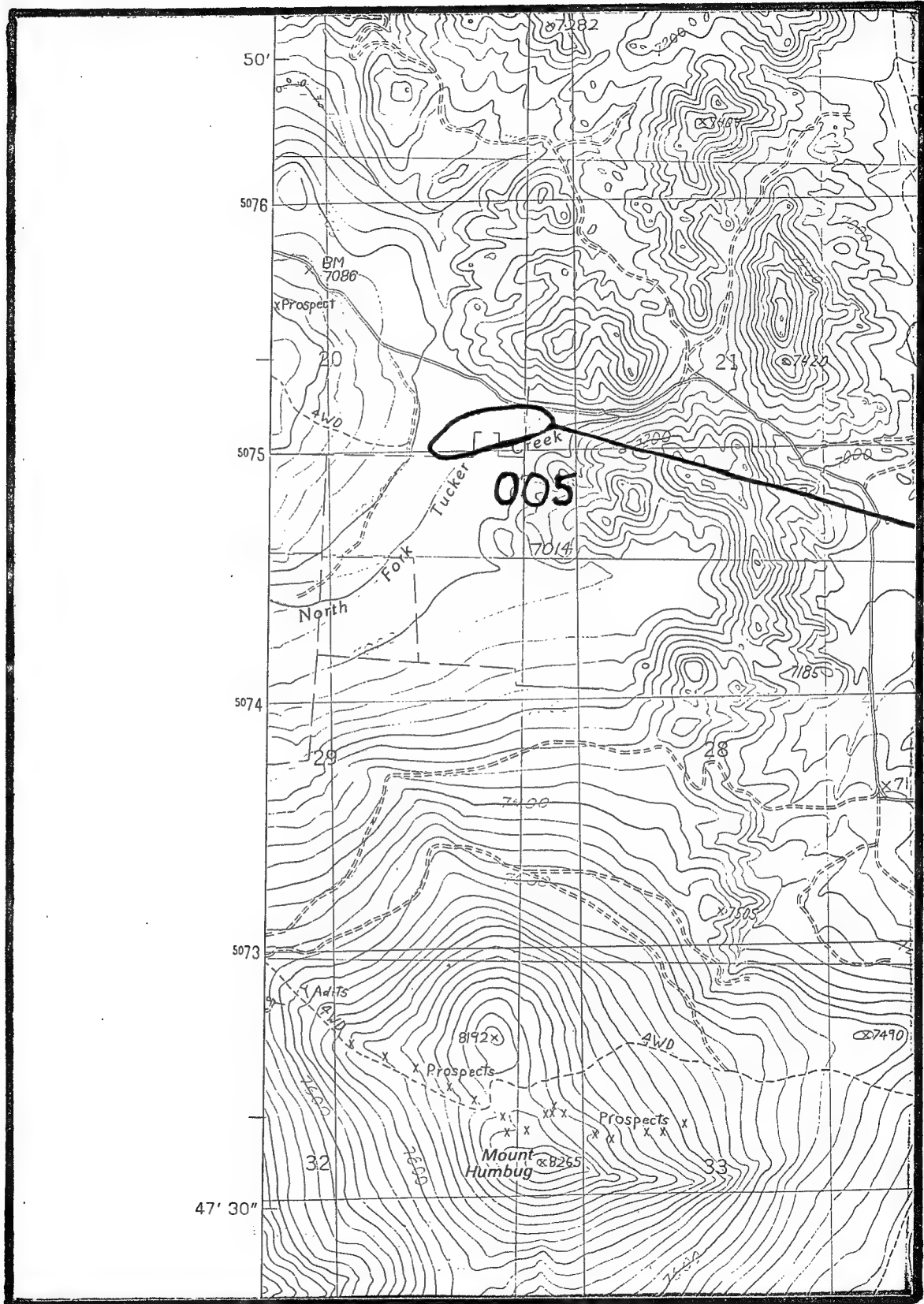
USGS Mount Humbug (7.5') Quadrangle

Claytonia lanceolata var. flava

Burton Park (005)
(continued next page)

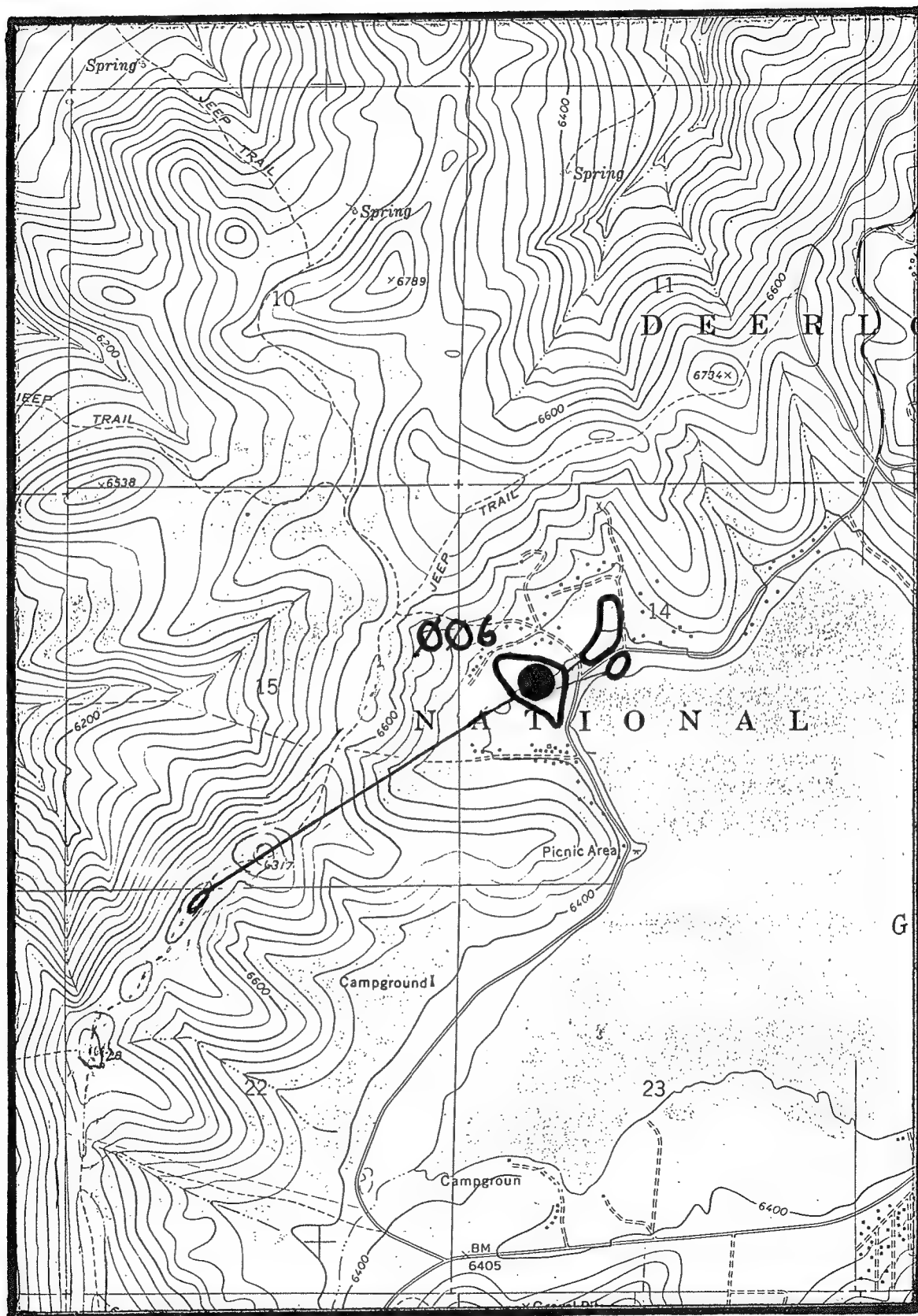
MONTANA

USGS Mount Humbug (7.5') Quadrangle

Claytonia lanceolata var. flavaBurton Park (005)
(continued)

MONTANA

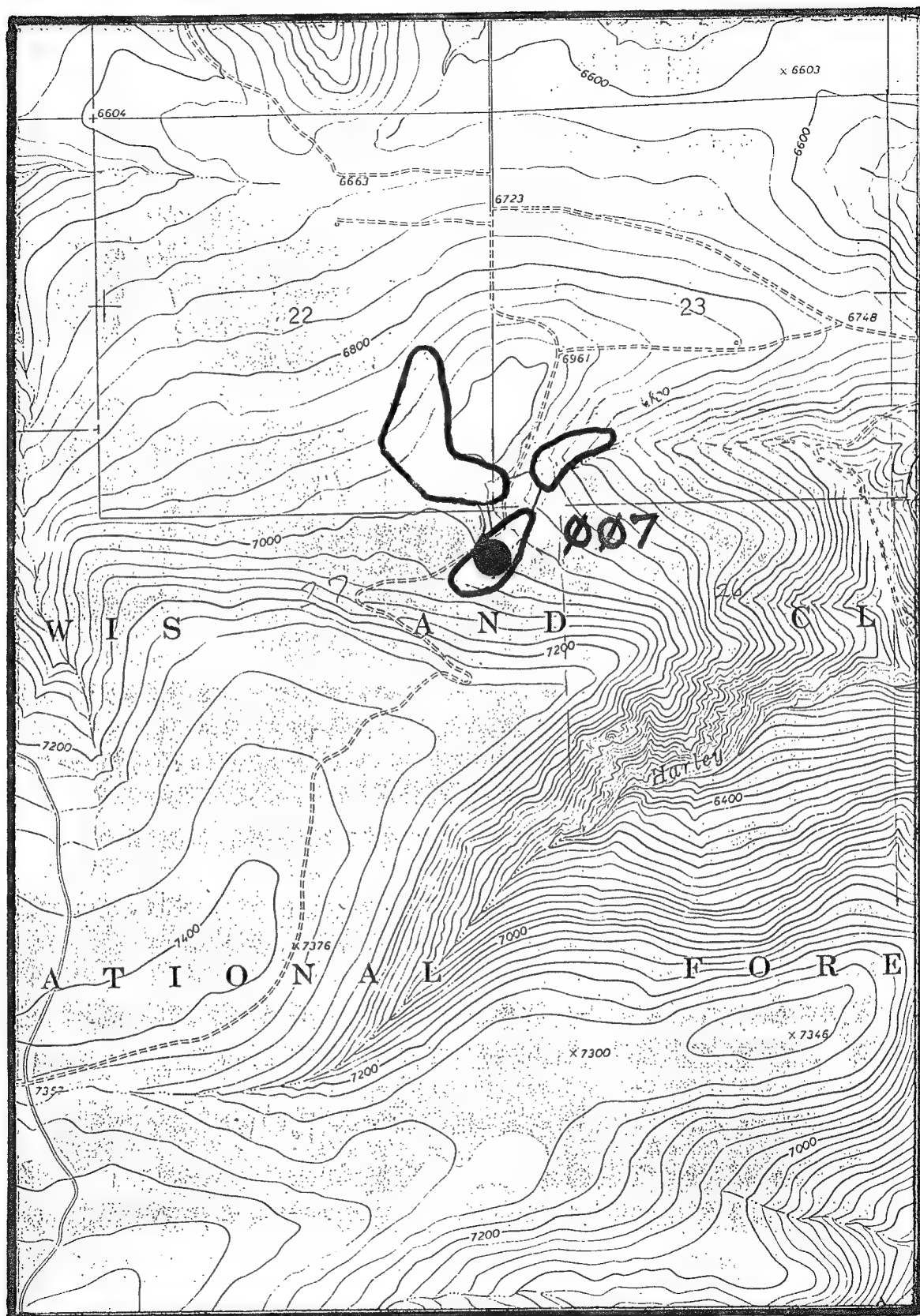
USGS Georgetown Lake (7.5') Quadrangle

Claytonia lanceolata var. flava

Georgetown Lake (006)

MONTANA

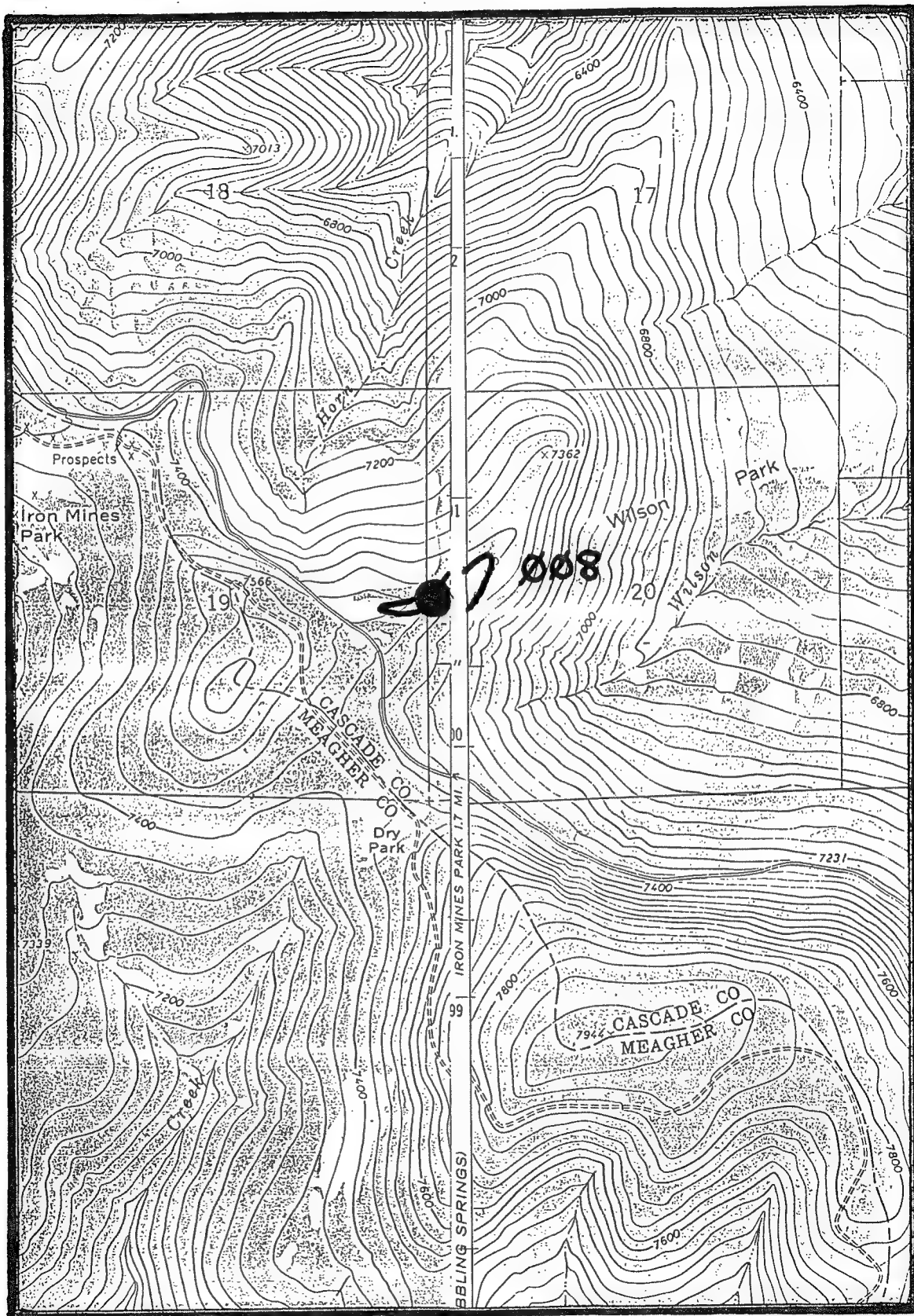
USGS Belt Park Butte (7.5') Quadrangle

Claytonia lanceolata var. flava

Belt Park (007)

MONTANA

(left) USGS Bubbling Springs (7.5') Quadrangle⁴⁸
(right) USGS Belt Park Butte (7.5') Quadrangle

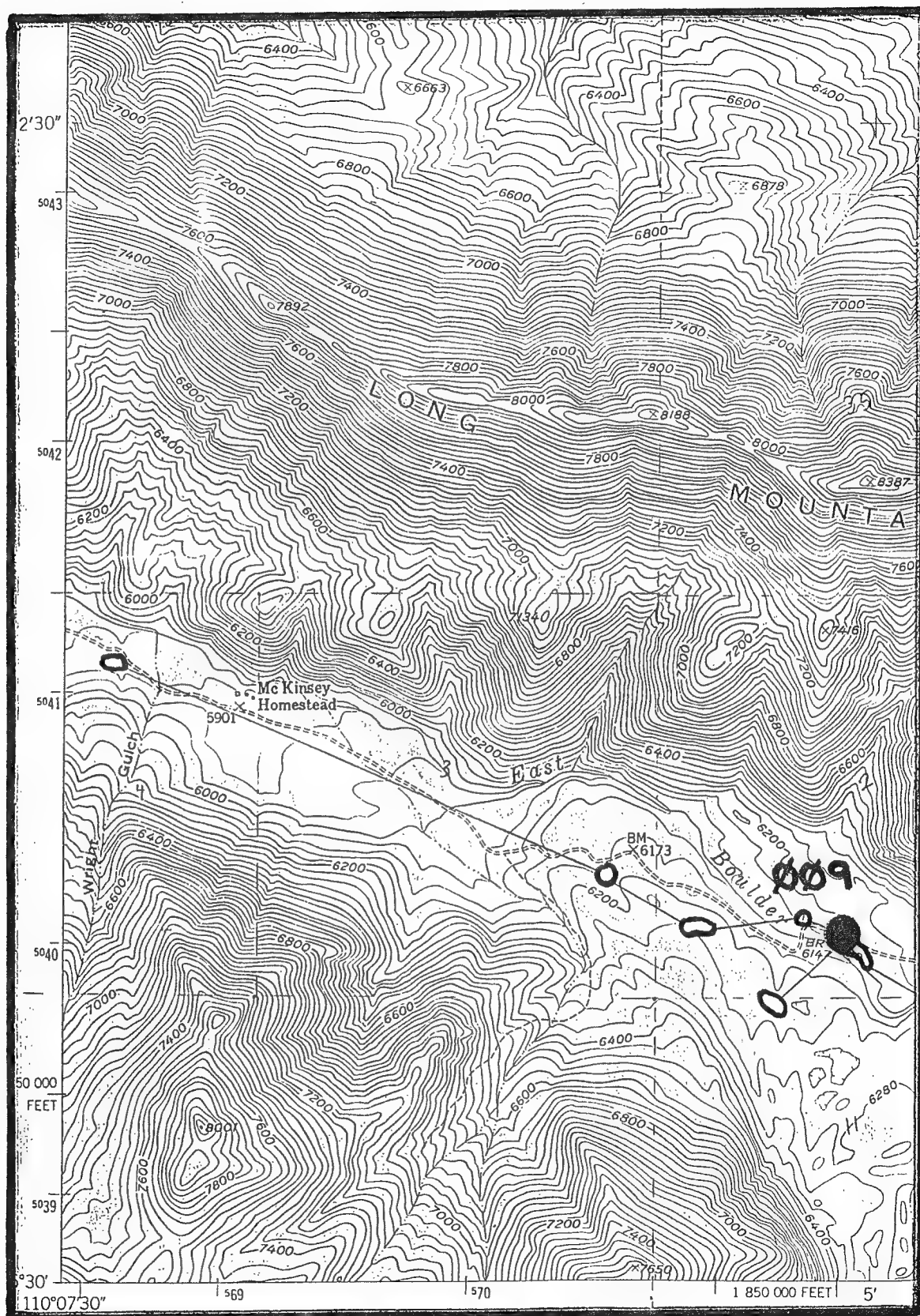


Claytonia lanceolata var. flava

Upper Wilson Park (008)

MONTANA

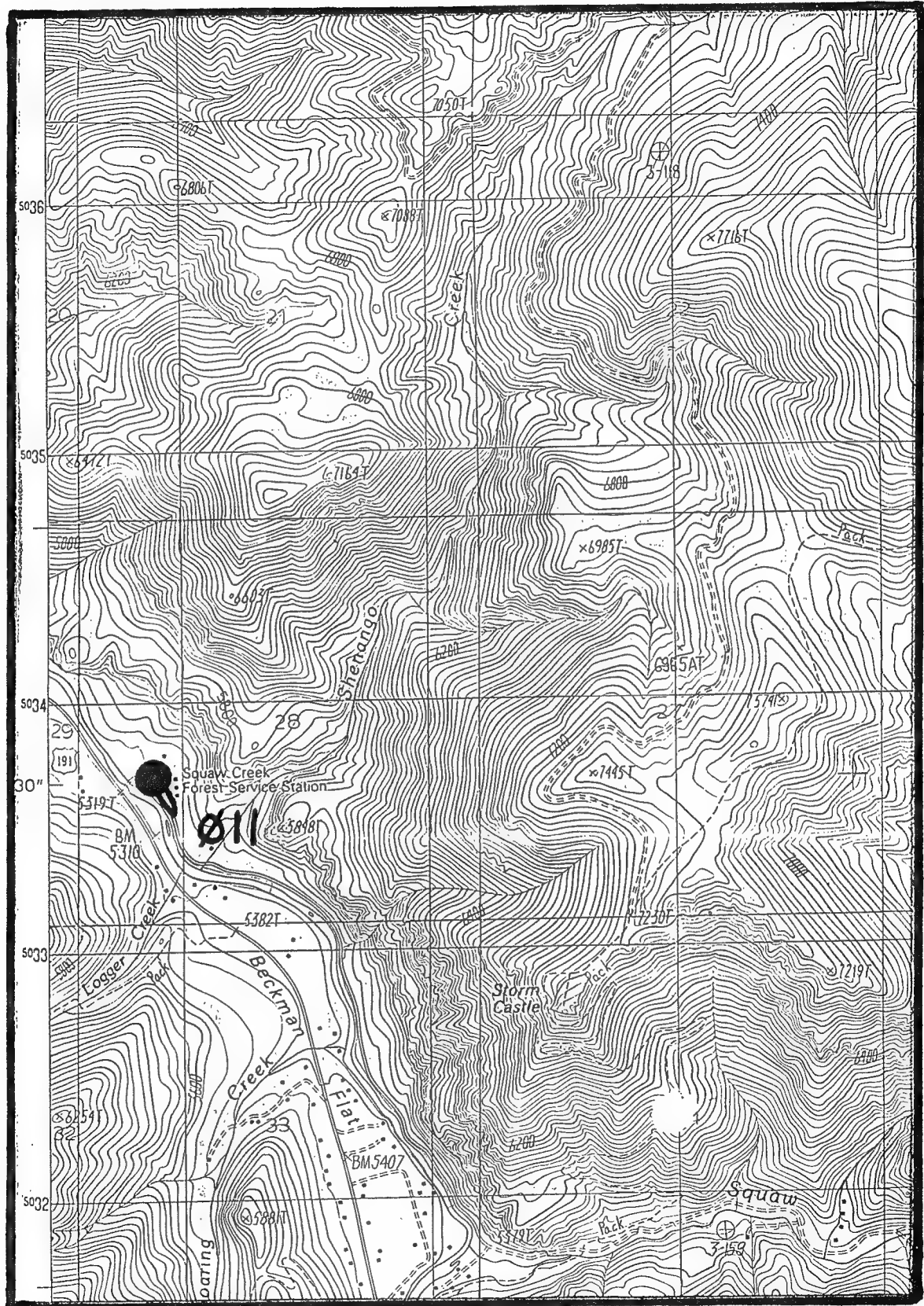
USGS Squaw Peak (7.5') Quadrangle

Claytonia lanceolata var. flava

East Boulder River (009)

MONTANA

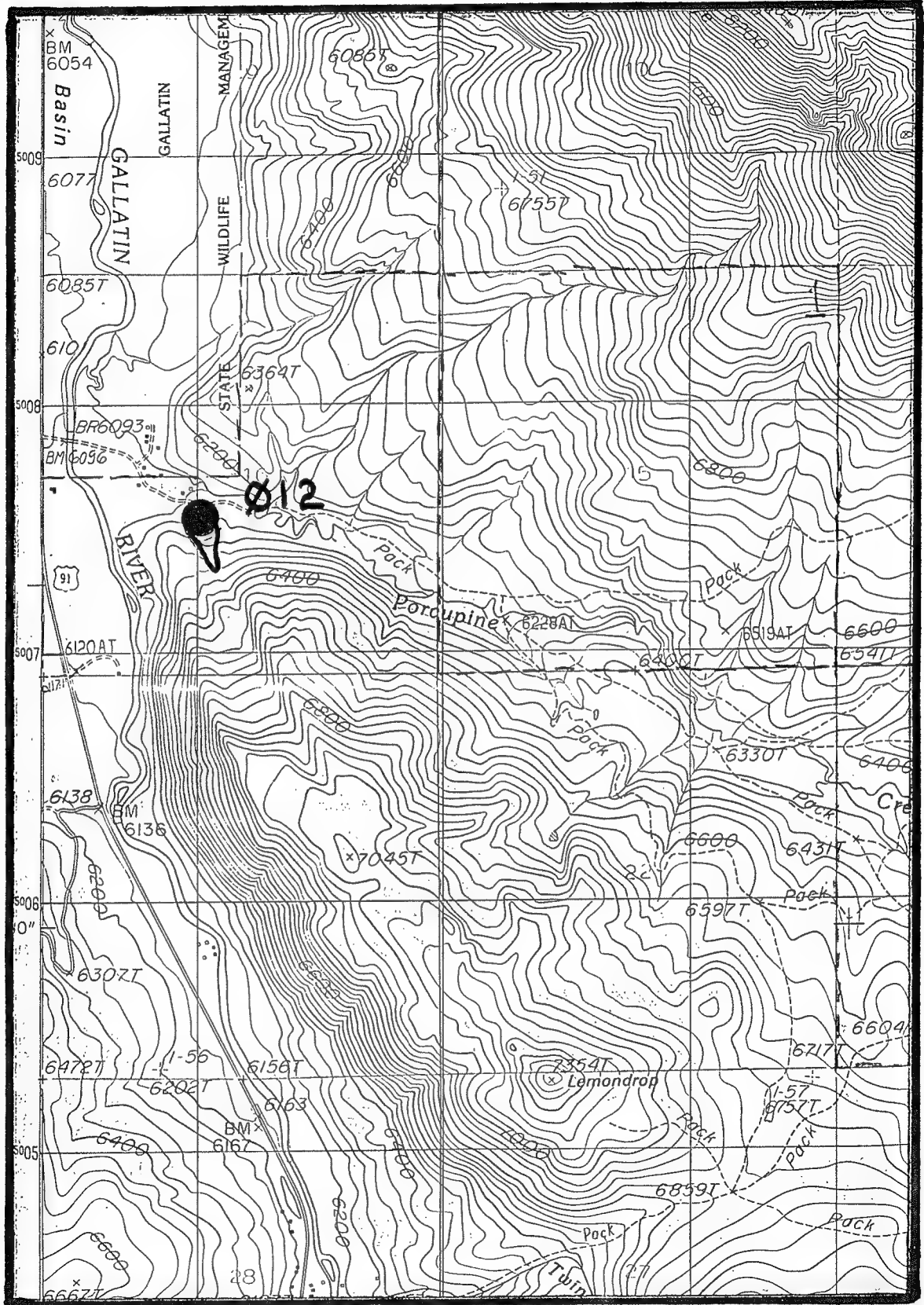
USGS Garnet Mountain (7.5') Quadrangle

Claytonia lanceolata var. flava

Squaw creek (011)

MONTANA

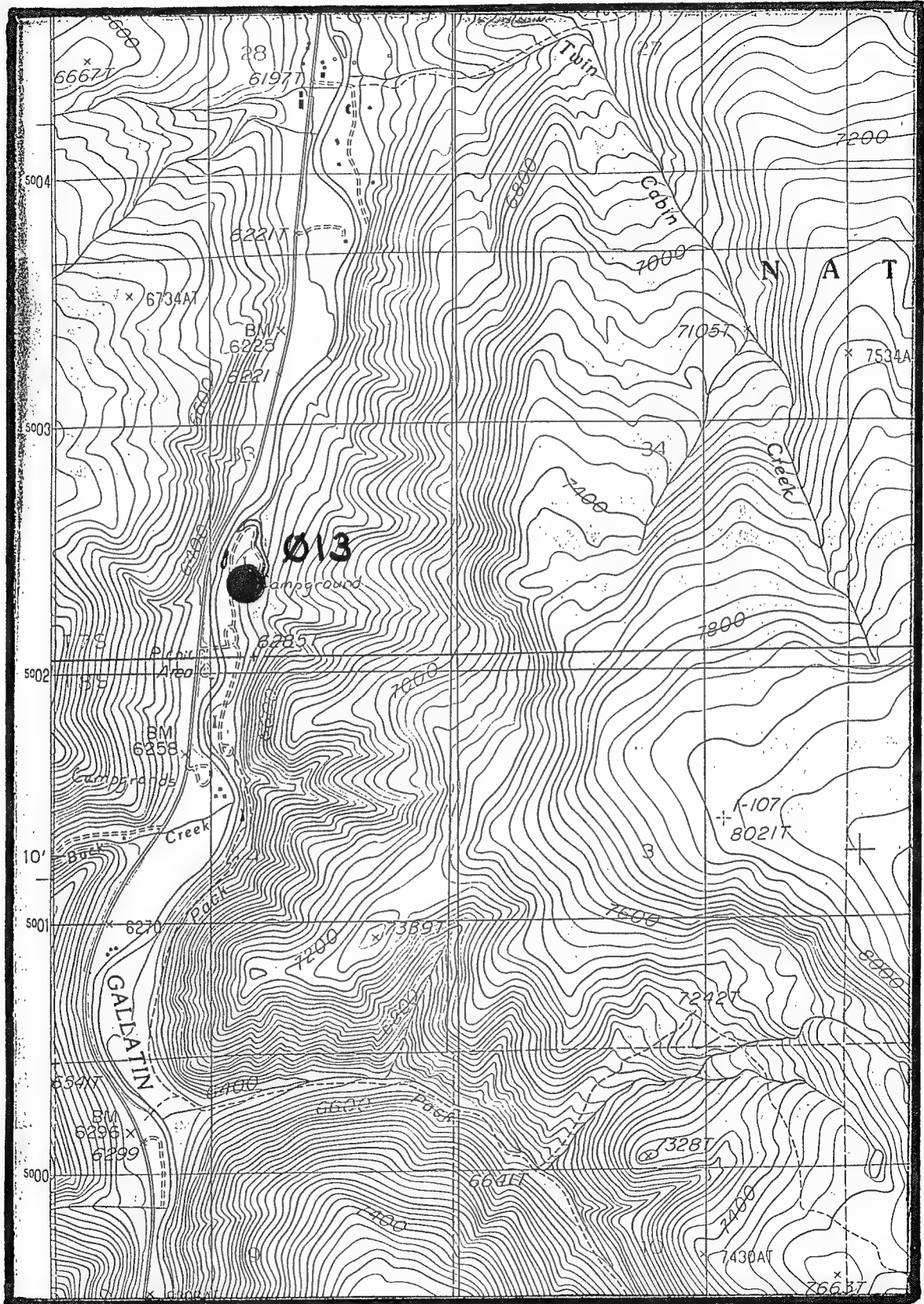
USGS Lone Indian Peak (7.5') Quadrangle

Claytonia lanceolata var. flava

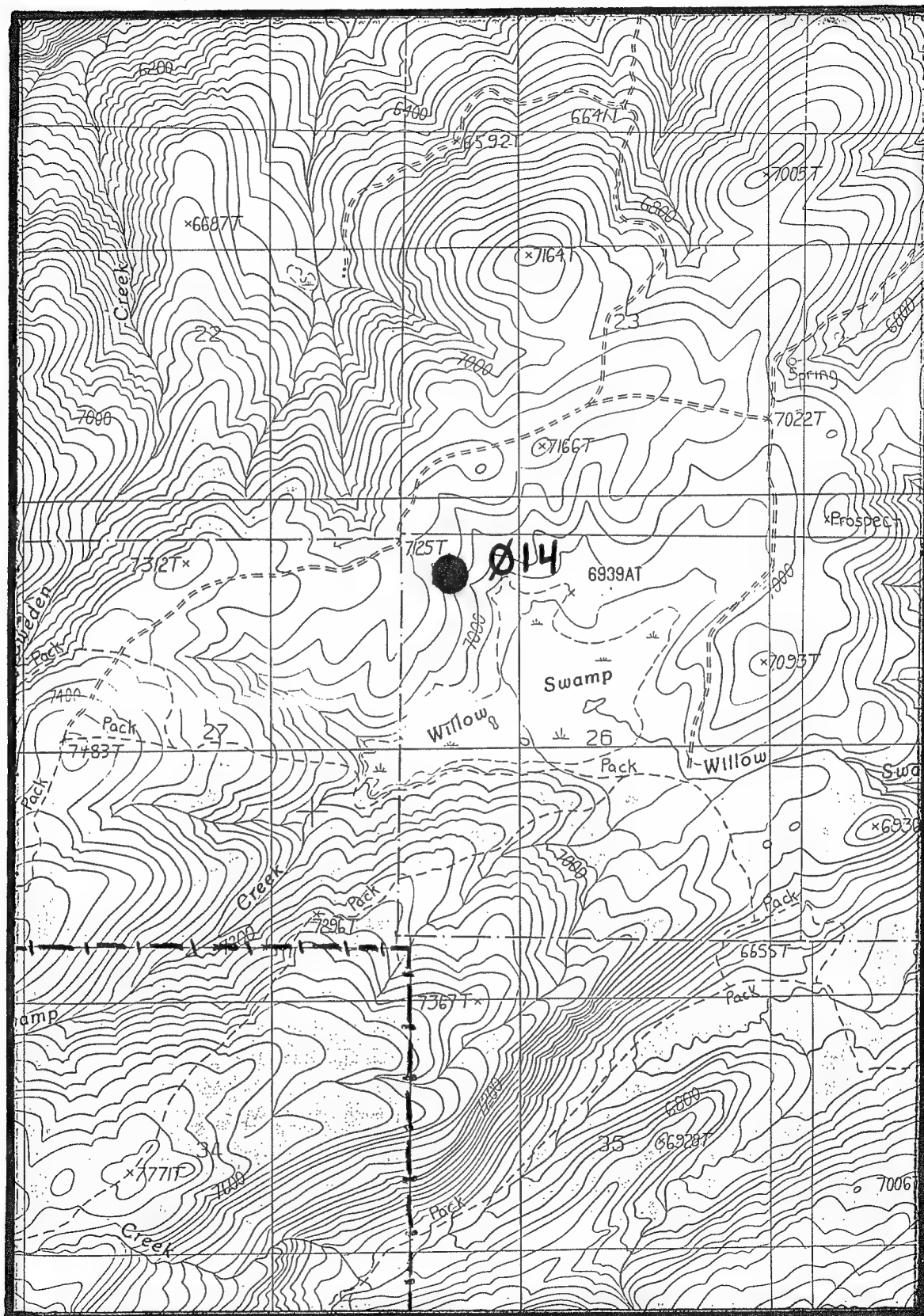
Porcupine Creek (012)

MONTANA

USGS Lone Indian Peak (7.5') Quadrangle

Claytonia lanceolata var. flava

Red Cliff Campground (013)

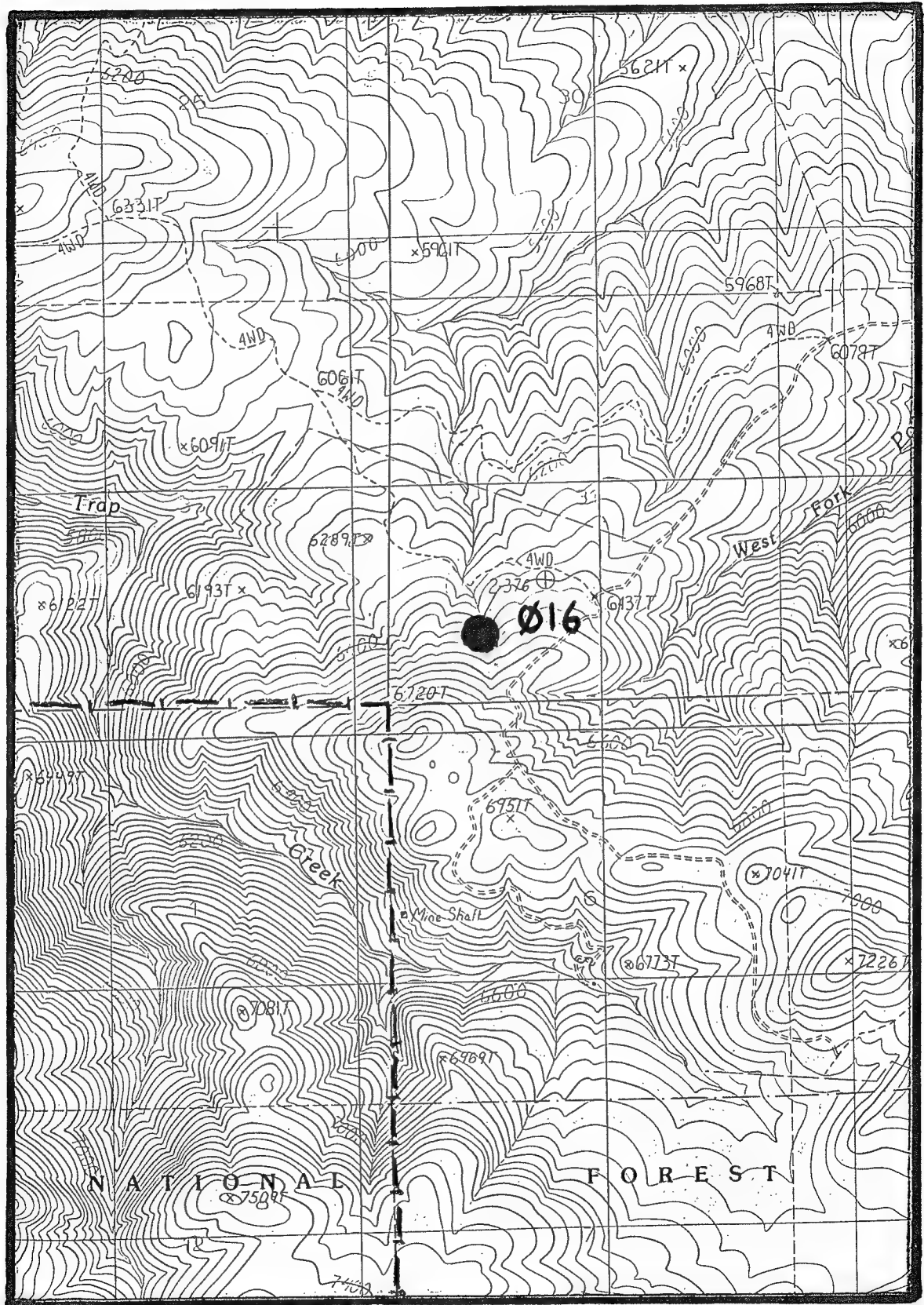


Willow Swamp (014)

Cherry Creek Canyon (015)

MONTANA

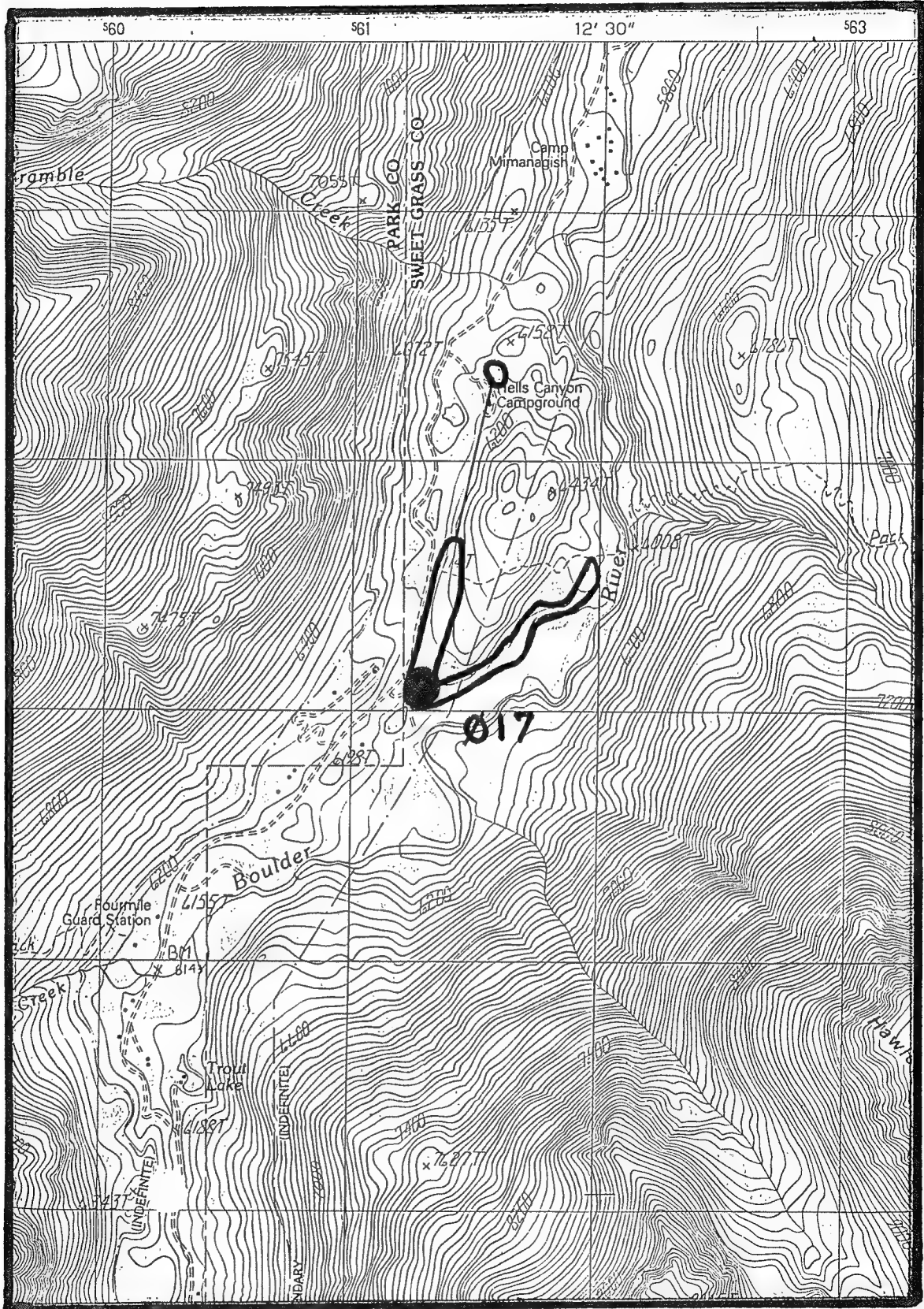
USGS Bear Trap Creek (7.5') Quadrangle

Claytonia lanceolata var. flava

Flying D Ranch (016)

MONTANA

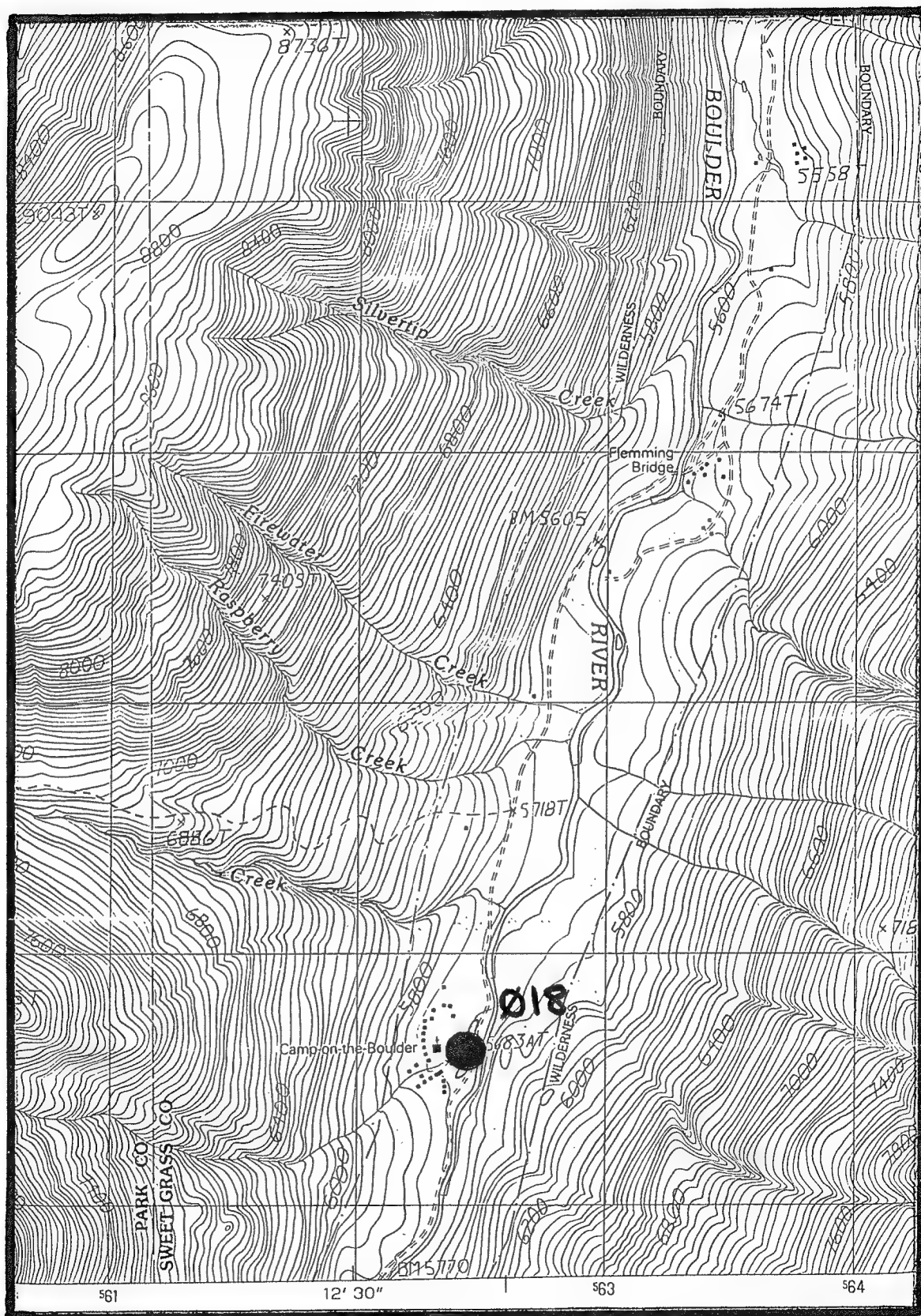
USGS Mount Douglas (7.5') Quadrangle

Claytonia lanceolata var. flava

Boulder River (017)

MONTANA

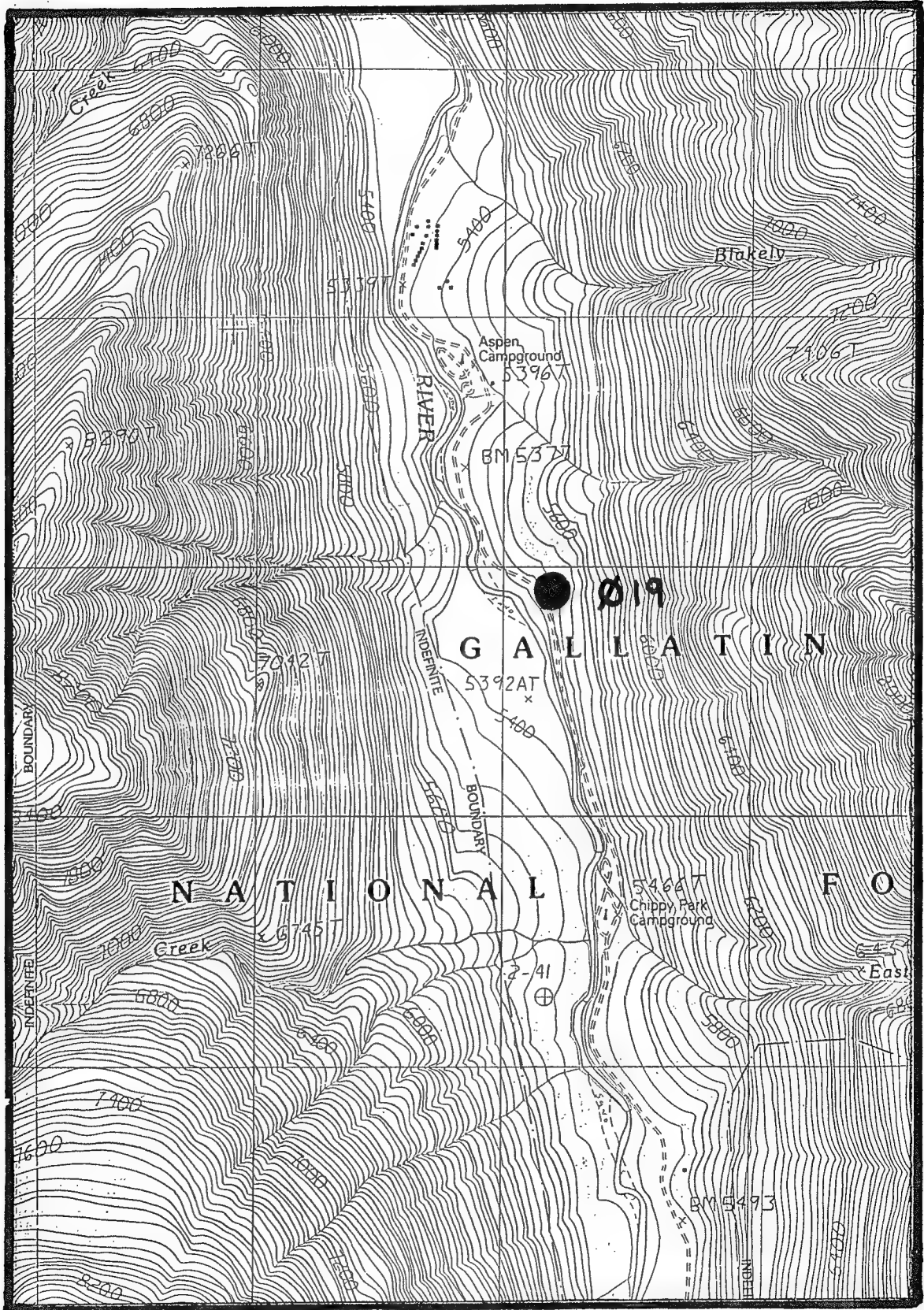
USGS Chrome Mountain (7.5') Quadrangle

Claytonia lanceolata var. flava

Boulder River (018)

MONTANA

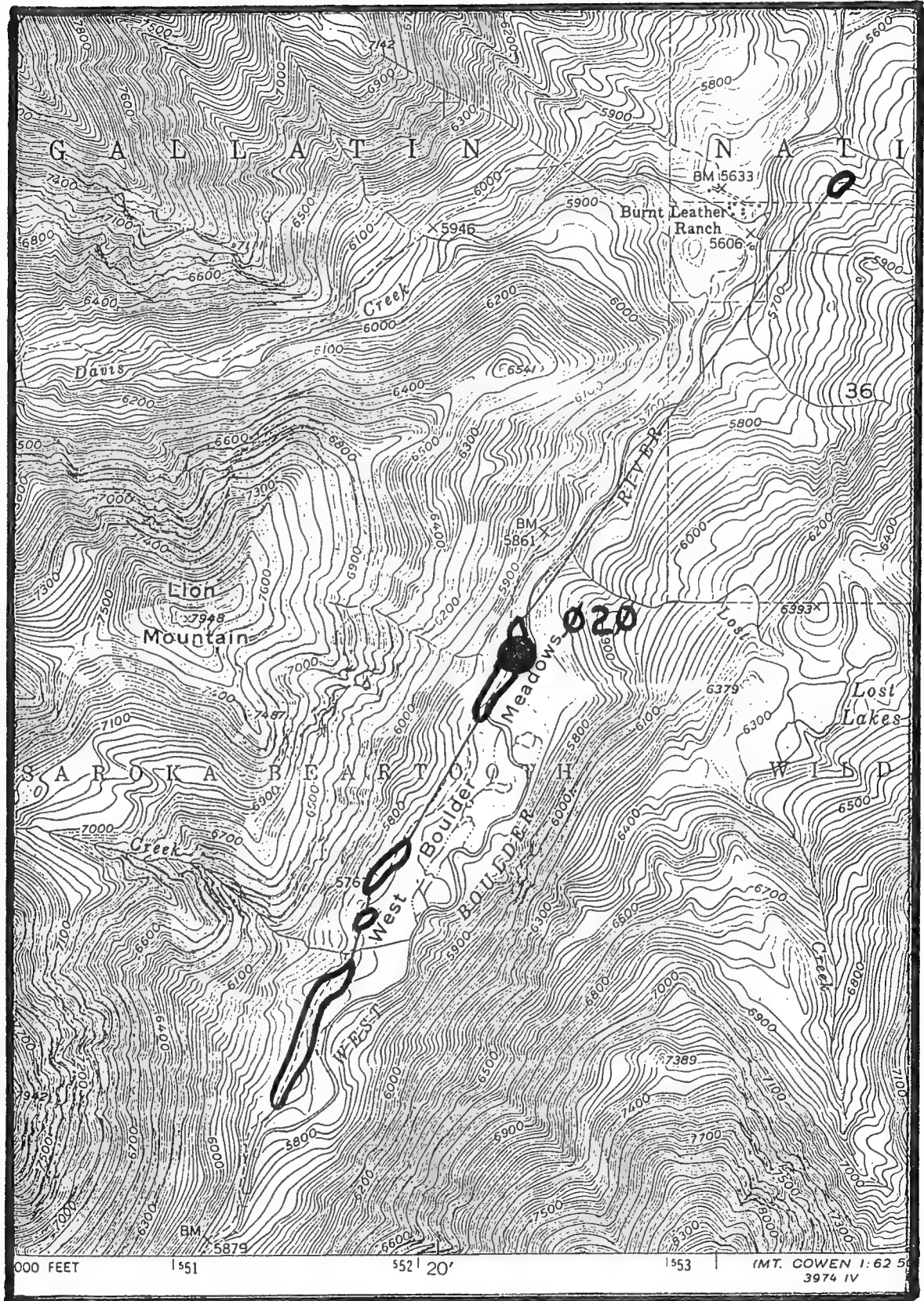
USGS Chrome Mountain (7.5') Quadrangle

Claytonia lanceolata var. flava

Boulder River (019)

MONTANA

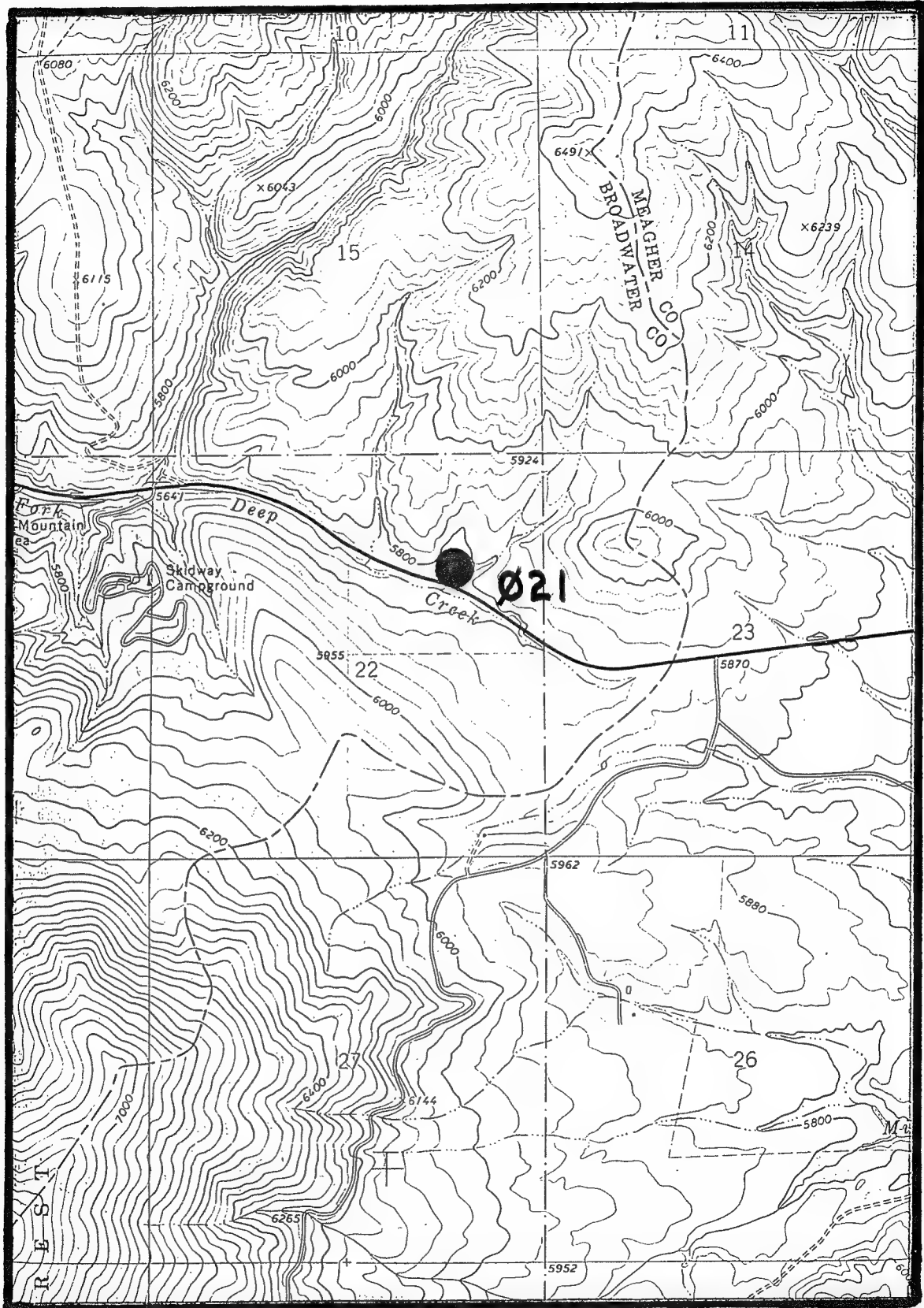
USGS Mount Rae (7.5') Quadrangle

Claytonia lanceolata var. flava

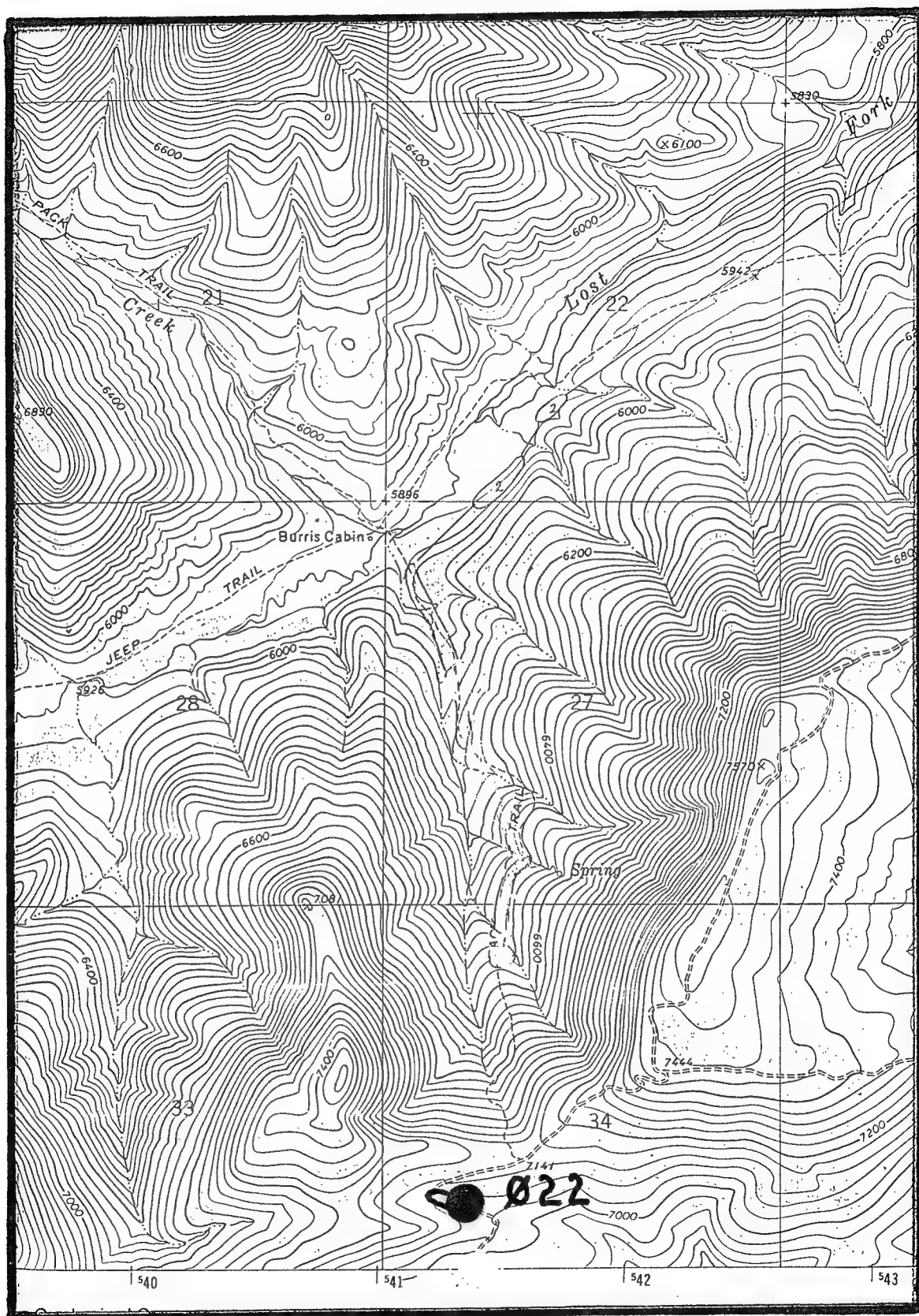
West Boulder Meadows (020)

MONTANA

USGS Battle Mountain (7.5') Quadrangle

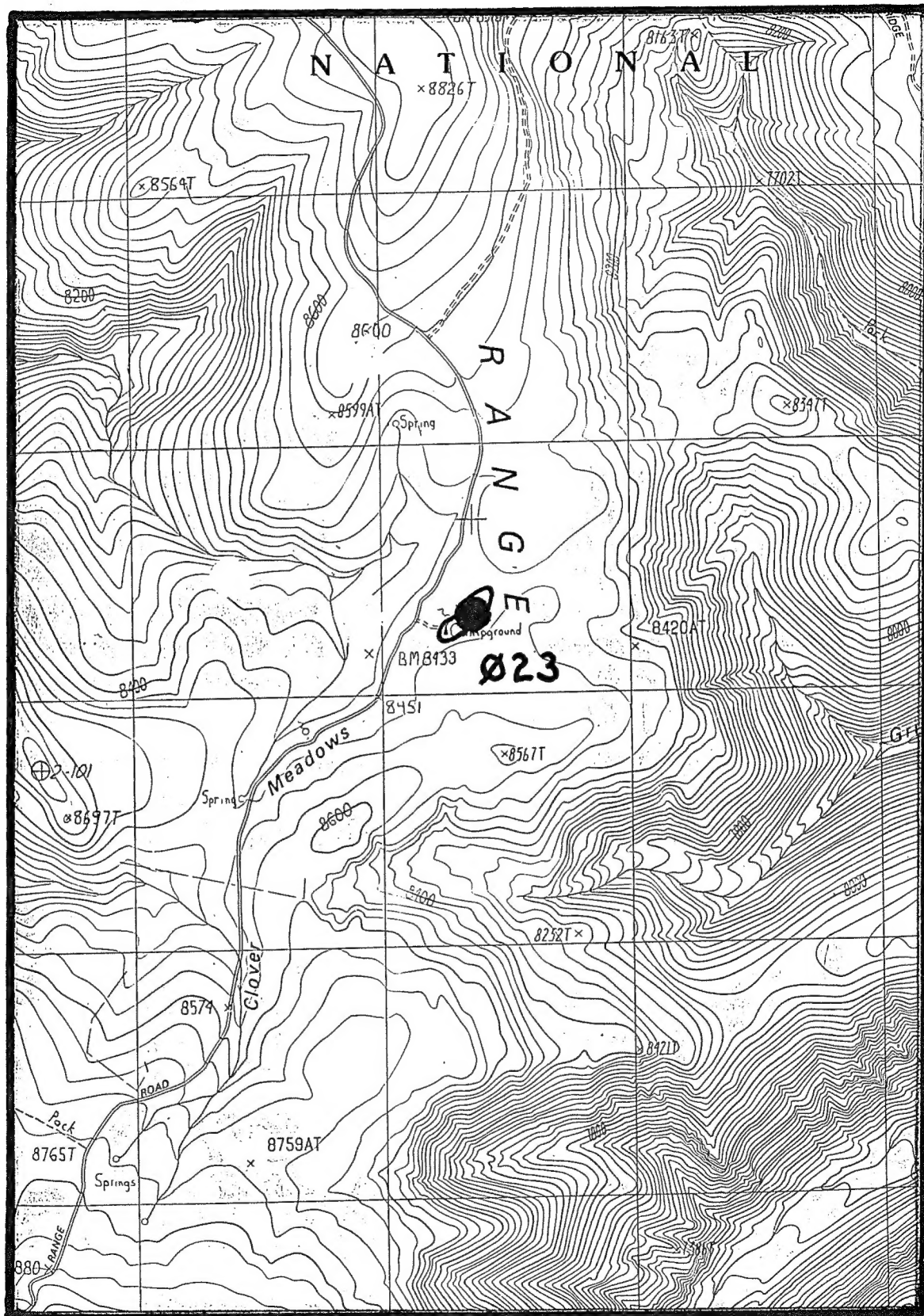
Claytonia lanceolata var. flava

Castle Fork Deep Creek (021)



Claytonia lanceolata var. flava

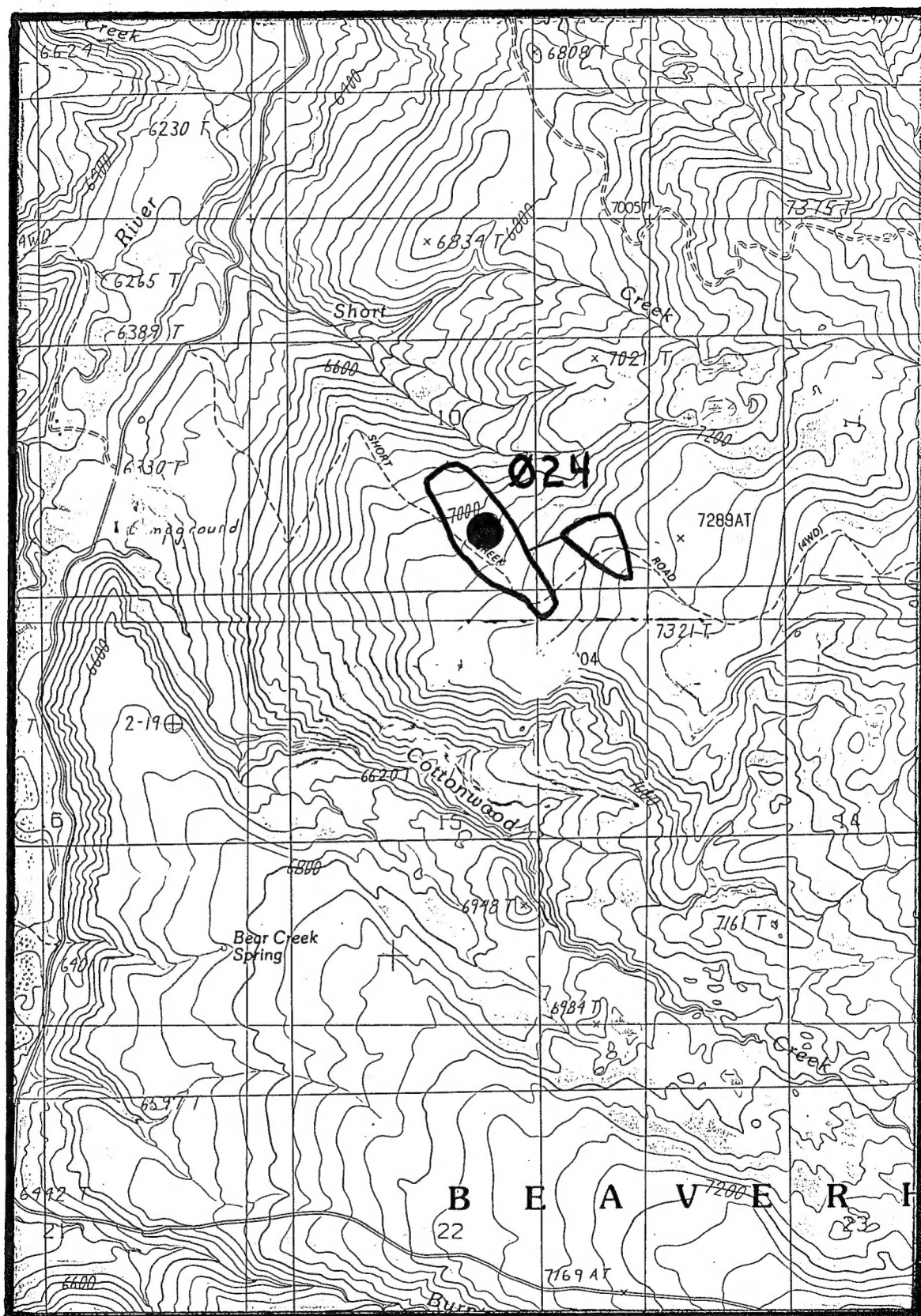
Ettien Ridge (022)



Clover Meadows (023)

MONTANA

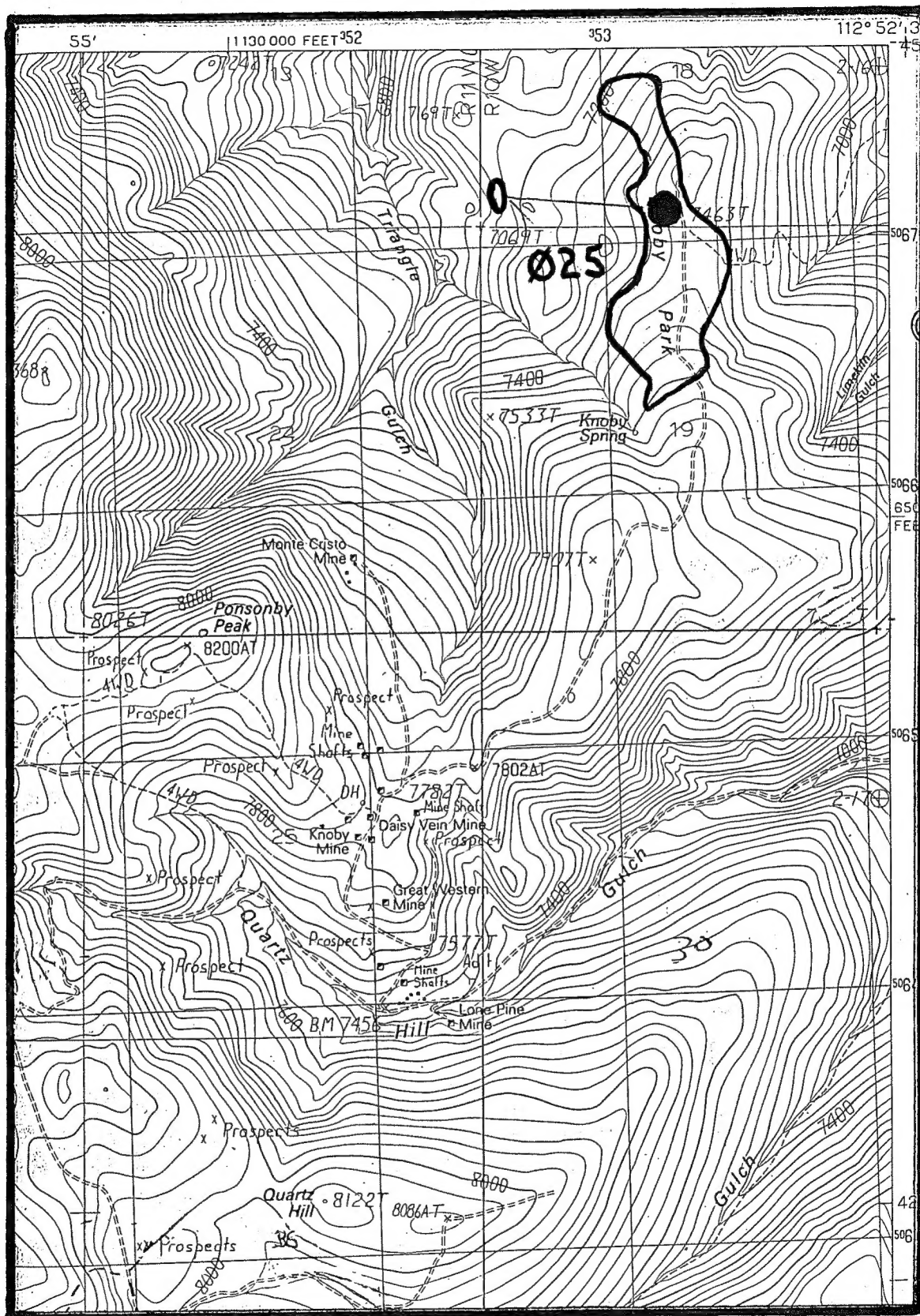
USGS Iron Creek (7.5') Quadrangle

Claytonia lanceolata var. flava

Cottonwood Creek (024)

MONTANA

USGS Vipond Park (7.5') Quadrangle

Claytonia lanceolata var. flava

Knobby Park (025)

